

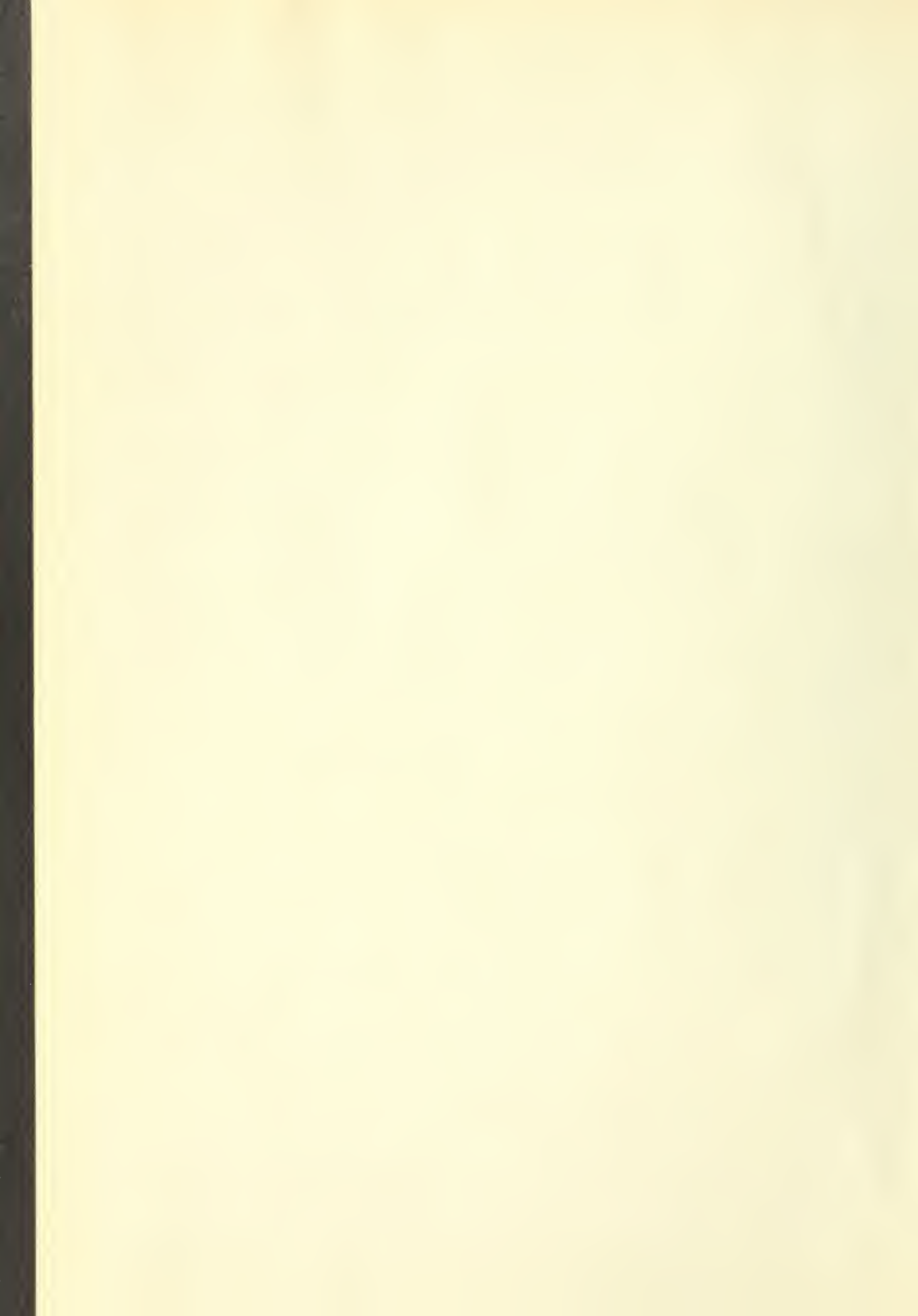
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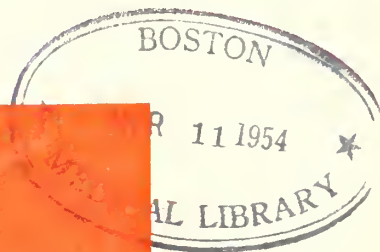
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Volume 47

JANUARY, 1954

Number 1

Many studies have been made and are being conducted for the evaluation of the hypotensive drugs. The present state of knowledge is confused and its final clarification must be awaited in future years. This paper gives an interim review of what is known about some of these drugs.

THE USE OF DRUGS IN THE MANAGEMENT OF HYPERTENSION*

By SAMUEL S. RIVEN, M.D.,† and JOHN G. WELLS, M.D.,† Nashville, Tenn.

In spite of the relative rapidity of recent research, the successful treatment of essential hypertension remains one of the most difficult problems in medicine. Lacking a clear understanding of normal processes and of pathologic conditions attendant upon hypertension, the complexities of the disease seem to grow rather than diminish as our knowledge increases.

The physician faced with the problems of therapy must base his program upon the experience of others. In hypertension, this is unusually difficult. Because of the very complexities of the disease and the often unpredictable responses of the individual patient, such experiences are bewilderingly diverse, and the voluminous literature that appears each year on theories of etiology, pathologic physiology and therapy only serves to add to the confusion. A practitioner cannot evaluate the material as rapidly as it appears and the treatment is apt to become inconsistent.

Diagnostic Evaluation

Even gross statistical probabilities are of little help to the clinician in the evaluation of the individual patient and the determination of procedures for treatment. Nevertheless, although etiologic and pathologic

aspects have defied clarification, diagnostic procedures have become more crystallized and therapy less haphazard.

Evaluation of a given patient with elevated blood pressure requires carefully detailed studies. Failure to carry out indicated studies can result in improper diagnosis, prognosis and treatment. Physical examination is undoubtedly the most important part of the evaluation (and most often neglected), but a good history, basic laboratory studies, and certain X-ray studies are also very essential. Hospitalization is not usually necessary, but in some cases it is advisable.

Evaluation should follow a plan. Basically, it should consist of (1) an evaluation of the patient's actual clinical condition and (2) an evaluation of the rate of progression of cardiovascular disease. The relationship of heredity, environment, related disease, age and all other factors, are determined so that an intelligent therapeutic program can be established.

The first information that must be obtained is that which tells the physician just how sick the patient is. In essence, this is not an evaluation of the hypertension *per se* but an evaluation of the hypertensive cardiovascular disease. This entails exhaustive search for curable causes of hypertension and an attempt to determine the exact amount of pathogenetic damage which has developed during the course of the hypertension.¹

Facts in the history which aid in this part of the study include symptoms of congestive

*Read on Cardiac Day, November 18, 1953, sponsored by the Middle Tennessee Heart Association.

†From the Department of Medicine, Vanderbilt University, School of Medicine, Nashville.

Work aided in part by the John B. Howe Memorial Fund.

heart failure (dyspnea, orthopnea, nocturnal polyuria, edema, angina, weight gain) retinitis (blurring of vision, etc.), cerebrovascular disease (headache, tinnitus, confusion, memory changes), or renal disease (polyuria, oliguria, pruritis, hematuria, etc.). A negative history is of much significance in the presence of hypertension. It implies a relative lack of vascular susceptibility and or hypertension of brief duration. Either situation improves the prognosis.

Physical examination yields a vast amount of information concerning the degree of cardiovascular disorder present. Detailed study of the blood pressure reveals basal levels, degree of fixation of pressure, lability, and in general shows the amount of strain to which the cardiovascular system is being subjected. Repeated measurement of the pressure under different conditions is essential. Examination of the ocular fundi cannot be overemphasized. As has been so adequately demonstrated by Keith and Waggoner,² the vessels and optic discs develop changes which are closely related to changes in other parts of the vascular system. The size and activity of the heart are evaluated and signs of congestive failure are searched for. Over half of the hypertensives who develop pathologic changes as a result of hypertension show manifest congestive failure at some time. Practically all develop cardiac enlargement.

During the physical examination, certain rare conditions which can cause hypertension should always be sought for. Coarctation of the aorta can nearly always be diagnosed by physical examination alone. Pheochromocytoma usually shows a pressor response to abdominal palpation, occasionally shows a marked pressor response to standing, and may rarely present a palpable tumor. Polycystic renal disease presents large, usually palpable kidneys. Unilateral renal disease may present suggestive tenderness. These and other findings should never be overlooked.

Special examinations which should be done in all hypertensives include urinalysis, NPN determinations, and chest X-ray studies. In addition, it is nearly always advisable to obtain an electrocardiogram,

PSP excretion, a concentration test, the cold pressor or other pressor test, amyltal or other depressor test, Fishberg concentration test, and the intravenous pyelograms. Less frequently, examination includes a test for urea clearance, pheochromocytoma (such as by the use of Benzodioxane or Regitine), X-ray films of the skull psychiatric evaluation, a Master's test, and a lumbar puncture.

Combination of the material obtained in this evaluation should enable the physician to know the condition of his patient's cardiovascular system. When combined with information concerning progression, it enables him to determine accurately the need for treatment. One can also guess as to how effective this treatment will be.

Clinical Course

Progression of cardiovascular disease is the factor which is most important in determining the need for treatment. It represents the damage which hypertension is causing in the cardiovascular system. When the blood pressure, cardiac function, and renal function remain unchanged for a long time, it indicates a lack of susceptibility. It lessens the urgent need for treatment. When, on the other hand, there is evidence of progressive deterioration of one or more spheres of the cardiovascular system, need for treatment is urgent.

Progress of the disease is a direct function of time. Hence, the two ways in which information concerning progression is obtained are: (1) detailed evaluation of the history and (2) repeated examinations of the patient over a period of time. The first of these sources of information should always be explored to the maximum. It sometimes gives an adequate index of progression so that further observation is not necessary. Usually, however, it is necessary to follow the patient for awhile and watch for evidence of renal, cardiac or other deterioration. Sooner or later, it becomes apparent that there is or is not a degree of progression. The physician is then ready to outline the program for management.

Most cases of hypertension do not need treatment. Others need intensive treatment. The decision of when to treat and how intensively to treat is complex and is

the reason for extensive study of the patient and comprehensive understanding of the disease. Basically, the decision to treat is made when the disease is progressing or will probably progress. Herndon discusses this problem in detail.²

Definite progression is relatively easy to recognize. Increasingly severe symptoms are reliable as evidence of such progression but should not be relied upon alone. Much more valuable and reliable are the ocular fundi and various laboratory tests. When fresh hemorrhages, exudates and disc changes appear there can be little doubt but that the vascular system is suffering progressive damage. Similarly, steady deterioration of renal function is evidence of progressive renal vascular damage. The most sensitive test for evidence of renal changes is measurement of renal blood flow by the para-amino hippuric acid clearance technique.

Probable progression is much less easily recognized. It is in this sphere that the greatest differences of opinion concerning the need for treatment arise. Family history, occupation, personality, vascular reactivity, race, age, and many other things must be considered together. The strain and susceptibility are outlined as carefully as possible and an attempt is made to guess about the future course of the disease. It is here that a physician's experience and intuition are of great importance.

Progression is an indication for treatment. Probable progression is an indication for treatment if the probability is high enough. The dividing line cannot be clarified further but, in general, the earlier treatment is begun the better will be the results.

Therapeutic Approach

There are two basic approaches to the problem of how to decrease peripheral resistance in hypertension. The first of these is to find the factor or factors causing the increased peripheral resistance in a given case and remove them. The second approach is to lower peripheral resistance by any means which will be effective and thus cause the pressure to return to normal even though the original cause of the increased

resistance remains unknown and possibly still active.

Cases in which the cause of the increased resistance can be demonstrated are not common. Six groups are commonly listed: (1) renal, (2) endocrine, (3) diffuse vascular, (4) intracranial, (5) toxemia, (6) coarctation of the aorta. These conditions should always be considered in a given instance of hypertension and occasionally it will be possible to specifically remove a cause of hypertension and thus prevent further damage to the cardiovascular system. Often, however, these conditions are coincidental to a hypertension of unknown cause or their existence over a period of time has caused vascular changes which in themselves are capable of maintaining the hypertension. Non-specific therapy then becomes necessary.

Non-specific reduction of peripheral resistance can be accomplished by diminishing one or more of the known pressor mechanisms. It can also be accomplished by the use of drugs which are known to lower the peripheral resistance even when the means by which they do this is not known. Usually the use of any one such non-specific means of lowering the pressure will not be potent enough to counteract both the unknown pressor mechanism and normal compensatory mechanisms. Thus, combined therapy is usually indicated.

In selected patients, psychiatrists have been able to grossly alter an abnormal response to psychic stress.¹ When effective, this can result in very satisfactory control of hypertension. The cases where it can be used are infrequent, however, and the intensity with which psychotherapy must be carried out makes widespread application of this method of treatment impractical.

As stated by Page,⁵ there is one universally accepted means of lowering blood pressure, though it is only moderately effective. This is by means of reducing the weight. For those patients who are markedly overweight and only moderately hypertensive, this may be sufficient treatment. Usually, however, other treatment is necessary.

Marked sodium deprivation will result in a lowering of the blood pressure in about

twenty-five per cent of patients with hypertension. The daily intake must be in the neighborhood of 200 mg., however, and this restriction is very difficult to accomplish. The rice diet is one way of doing it. Other, slightly more palatable diets have been tried with some benefit. Prolonged use of a low sodium regimen has not been practical in the past, however, because patients would not continue it long enough. The recent introduction of the sodium-acceptor resins has made it possible to alter these diets somewhat and it is possible that prolonged maintenance will prove practical in the future. In general, however, this method of control is not satisfactory for routine use.

Surgical Treatment

Two surgical methods of altering normal pressor pathways are available. These are sympathectomy and adrenalectomy. The latter of these methods is so new and drastic that its application in routine practice seems highly unlikely in the near future. Sympathectomy, however, has been used extensively for many years and has resulted in apparent control in a significant number of cases.⁷ Even in those patients whose blood pressure is not lowered, there may be spectacular relief of symptoms, although such a symptomatic result is of questionable value. Smithwick states that mortality is lowered about fifty per cent in unselected cases treated by sympathectomy. Others have reported less remarkable, but nevertheless favorable, results. The difficulty in applying this procedure lies in the difficulty of knowing which patient will respond. No one has been able to devise a means of selection of patients for sympathectomy which would exclude those who would not benefit from the operation. The most widely accepted indication for trial of the operation is failure of all less drastic measures.

The operation should be the lumbodorsal ganglionectomy of Smithwick. Less extensive procedures are ineffective and more extensive operations are still experimental. In the past, the operation has been withheld from patients with nitrogen retention and those above fifty years of age were rarely treated by sympathectomy. Recently, how-

ever, a relaxation of these strict criteria has resulted in some unexpected good results. Final conclusions concerning the selection of patients must wait further study. Current studies indicate that the use of sympathetic blocking agents may prove very useful in finding patients who would benefit from sympathectomy.

Treatment with Drugs

The most practical approach to satisfactory management of clinical hypertension is by the use of drugs. Development of a more satisfactory surgical treatment might change this and, on theoretical grounds, has the advantage of being permanent. At the present time, however, it is usually necessary to use some type of drug therapy in order to approach satisfactory control of the blood pressure in hypertension.

Like other therapeutic procedures, and for the same reason of a lack of knowledge concerning etiology, all of the drugs presently available are non-specific in nature. Whatever their modes of action, their function is primarily to lower the blood pressure and, with a lesser degree of success, to relieve the signs of hypertensive cardiovascular strain. In the past five years many hypotensive drugs have appeared, but not enough time has elapsed for us to have proved that any of them used singly or in combination, have the ultimate virtue of prolonging life in patients with essential hypertension.

Wilkins¹⁰ has stated the characteristics of the drug that would be ideal in the treatment of essential hypertension. Such a drug should be effective in lowering blood pressure continuously in a large proportion of cases. It should cause no toxic or physiologic side effects which are dangerous or even unpleasant. It should be practical for chronic use over the course of years, hence preferably should be effective by mouth and should allow adequate sleep at night. While these requirements are relatively simple no such drug is presently available.

The drugs used in the treatment of hypertension can be classified into groups of, (1) central depressors, (2) peripheral blocking agents, (3) humoral antagonists, and (4) specific vasodilators. Some drugs have a

combined action but, in general, one effect is predominant. Intelligent use of the different groups of compounds and combinations of them with other means of treatment will usually result in satisfactory control of the blood pressure.

(1) *Central Depressors*. These include sedatives, veratrum, Apresoline and Rauwolfia. Barbiturates and other sedatives are very widely used and in some cases are fairly effective. They are most valuable in symptomatic control, especially of headaches, but in general these compounds are of too low grade activity to be useful by themselves. In combination with other drugs they may be completely satisfactory, however.

Veratrum alkaloids have entered the field of hypertensive therapy during the past few years.⁸ They are quite capable of lowering the peripheral resistance in most patients, but because of the very narrow therapeutic index, satisfactory clinical control without undesired side effects is difficult to obtain. Taylor has reported that in a series of several hundred patients only three could take these drugs in amounts sufficient to lower average blood pressure without an emetic side effect, and that long term results have been far from encouraging. The compounds, however, have been most useful in the treatment of acute hypertensive crises. It is doubtful that the small doses of veratrum derivatives in various "shot-gun" preparations for use in treating hypertension have a significant effect.

Apresoline‡ is a phthalazine derivative which has recently received widespread attention.⁹ Its action appears to be principally central but there is also evidence that it is able to block the pressor activity of a number of substances. It is very mildly adrenolytic. In actual use this compound has proven to be of relative low toxicity and moderate potency. In some cases it alone may satisfactorily control the blood pressure, but usually it must be combined with some other agent. Favorable reports have appeared concerning the use of Apresoline with blocking agents, sympathectomy and

Rauwolfia. This compound probably will continue to be used extensively in the treatment of hypertension.

Unpleasant side reactions to this drug are present in a large proportion of patients, perhaps as high as in seventy per cent, but in only about ten per cent does the intolerance persist to the extent that the drug is contraindicated. The headaches caused by Apresoline are thought to be due to histamine which accumulates because of the antihistaminase activity of the drug. They can often be controlled with antihistaminics, if necessary, but in most cases the headaches become less severe as the drug is continued and they eventually disappear.

Some of the patients who develop nausea and vomiting with this drug do not develop any tolerance to it and its use must be discontinued. In a majority of cases, however, this problem can be minimized by starting with very small doses and increasing the amount very slowly.

The gradual building up of drug dosage is also important in preventing a severe reaction to the new low arterial pressure. Most patients go through a period of weakness, lassitude and mild depression when the blood pressure first drops. This reaction seems to be more severe in those patients who have a rapid drop, and it is usually advantageous to lower the pressure gradually.

Overdosage with Apresoline is not a practical problem. Both in man and in experimental animals there is a "floor" below which the blood pressure will not drop despite increasing doses. The limit of dosage is usually determined by the appearance of undesirable side effects and not by an exceedingly low blood pressure.

While Apresoline alone may satisfactorily control the blood pressure in some cases, its greatest value will be found in its combination with some other agent. Favorable reports have appeared concerning its use with blocking agents, such as hexamethonium, sympathectomy and Rauwolfia.

Rauwolfia serpentina§ has been used for a number of years in India, but it is new to

‡"Apresoline" available from Ciba Pharmaceutical Products, Incorporated, Summit, N. J.

§"Rauwolfia Serpentina" available from E. R. Squibb & Sons, New York City.

American medicine. Preliminary reports have indicated that it has a complex sedative and depressor action which has been useful in the control of hypertension,¹⁰ especially in combination with Apresoline. It has a mildly hypotensive effect but it does not produce postural hypotension or abolish sympathetic vasopressor reactions. Its side reactions, nasal congestion and bradycardia, are not a significant problem but its sedative effect may, in some cases, require a reduction or an interruption of dosage. It has been reported to have a tendency to promote a gain in weight. It acts very slowly, requiring three or four days to produce any effect and several weeks to produce its maximal effect. Whether this drug will prove to be of lasting value remains to be seen. Its use alone is most satisfactory in patients with anxiety neurosis and a labile blood pressure, particularly when associated with tachycardia. It has little hypotensive effect when given alone in chronic, severe, fixed hypertension, although its ability to slow the heart and sedative effect may result in subjective improvement.

(2) *Peripheral Blocking Agents.* These substances lower the peripheral resistance by paralyzing sympathetic ganglia. Although this type of agent has been known for years, it was not until hexamethonium was developed that an agent became available to which the body did not become rapidly resistant. Additional compounds of this type are now being studied, but hexamethonium is the only agent in this group which is of practical value at this time. It is usually capable of dramatically lowering the blood pressure and, in fact, its drawback lies in its tendency to lower the pressure too far. Unless used with the utmost caution this drug is extremely dangerous.¹¹

Hexamethonium has a complex action. When first given, it acts chiefly as a sympathetic blocking agent. In the course of chronic administration, however, some degree of tolerance usually develops and although the blood pressure may be lower because of a diminished cardiac output, peripheral resistance may actually be increased. There is some evidence that actual stimulation of sympathetic ganglia occurs

in tolerant individuals. In addition, renal blood flow is diminished when hexamethonium is first given and in the presence of a diminished cardiac output may remain below pre-treatment levels. Wilkins reports a case in which electrocardiographic changes suggesting myocardial ischemia developed in a patient during a profound hypotensive response to a small parenteral dose of hexamethonium. After recovery from the hypotension the initial changes in the electrocardiographic pattern persisted, with a clinical course typical of a myocardial infarct. In summary, hexamethonium is a potentially dangerous drug of complex action. Although its use can be lifesaving, injudicious use can be very harmful. The drug should be given only under the most careful supervision.

Schroeder¹² reports the effective use of hexamethonium in combination with Apresoline, terming the combined drugs Hyphex. While he recognizes the hazards of hexamethonium therapy, he believes that with the Hyphex method of control of hypertension the benefits outweigh the dangers.

We have had some experience with combined or Hyphex therapy and in general have employed the treatment plan recommended by Schroeder. The patients have been regularly hospitalized at the outset for evaluation and treatment with a thorough history, physical and laboratory examination on each one. The blood pressures were observed at bed rest over a period of four days in order to establish a base line.

Hexamethonium therapy was then instituted in a *slow, cautious, and step-wise* plan of increasing doses. It was found that hexamethonium generally produced a fluctuating pressure with fair swings between the high and low points of the systolic and diastolic pressures. When the nadirs of the swings approached the desired pressure levels, Apresoline was added similarly in a *slow, cautious, and step-wise*, fashion of increasing doses until the desired therapeutic effect was obtained. Patients with "essential" hypertension were easily brought down to normotensive or near normotensive levels. Patients with previous sympathectomy were regulated to some inter-pressure

where they could safely sustain the over-prominent orthostatic hypotensive tendency engendered by their operation. Patients with malignant hypertension had their blood pressure lowered very slowly and with great regard paid to the non-protein nitrogen blood levels and urinary output.

With due attention paid to these factors some of the most severely hypertensive patients were benefited. Each patient was judged and evaluated on his own merits. We found that a helpful plan was to keep in mind the circumstances shown in figure 1.

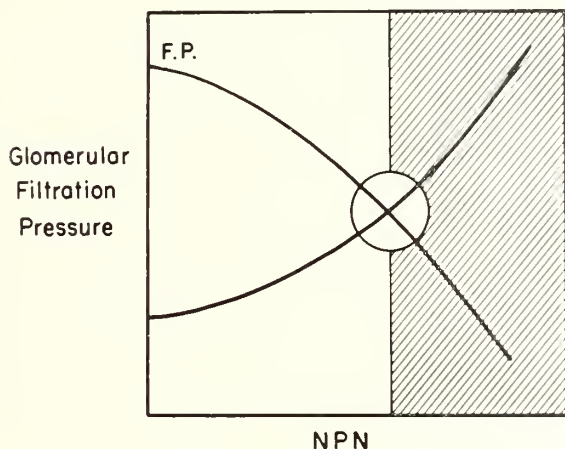


FIGURE 1

The site marked X and encircled is peculiar to the individual patient and can only be determined by careful observations of the renal function response to blood pressure lowering. Filtration pressure (a function of mean arterial pressure) must be maintained in order to preserve adequate renal function. When one stays in the clear area, little difficulty is encountered. When one shifts into the shaded area the blood pressure is lowered too far. Thus, these drugs are potentially dangerous. There have been a few reports of serious disorders due to rapid lowering of the blood pressure followed by cerebral thrombosis, coronary thrombosis, and renal failure. Fortunately they are rare and awareness of the pharmacologic potentialities of these drugs should guide one in forestalling these unhappy events.

We have found that moderate intelligence and ability to follow directions were among the basic requirements in selecting patients

for Hyphex therapy. We have taught a member of the family to use the blood pressure cuff and regulate the hexamethonium dosage according to the individual response learned during the hospital stay. For instance, in a sample situation, a patient would be instructed as follows:

Take Apresoline 50 mg. every 4 hours except at 2 A.M.

Take hexamethonium 250 mg. every 4 hours except at 2 A.M., if systolic blood pressure is over 180.

If systolic blood pressure is less than 180, but more than 150, take hexamethonium 125 mg. every 4 hours.

If systolic blood pressure is less than 150 omit the dose of hexamethonium.

The patients were warned to expect, on institution of therapy with Apresoline, and on a change of dosage, that there might be side effects but that they would disappear. Hexamethonium, likewise produces disturbing and often annoying reactions, and each patient was warned and reassured concerning this. Most of these reactions subsided as therapy was continued. Careful attention was given to the bowel habits and laxatives used when necessary. In particularly troublesome cases, Urecholine Chloride was given in five and ten mg. doses every eight hours. Hypotonicity of the bladder may occur and if time alone does not deal with it, Urocholine is usually effective. Benign hypertrophy of the prostate should be treated if present. The patients were also thoroughly instructed to rise slowly from the sitting or supine position in order to ward off unpleasant orthostatic hypotensive reactions.

It is too early to evaluate the long term results of the Hyphex therapy of hypertension. It is to be hoped that simpler and more adequate methods of treatment will become available. Until this is so, Hyphex remains probably a useful tool in the treatment of hypertension. The treatment requires reasonable intelligence and cooperation on the part of the patient, patience, enthusiasm and time spent on thorough instruction to the patient by the physician. The results based on relief of the various complications resulting from hypertensive cardiovascular disease makes this procedure worthy of trial.

Wilkins, however, believes that the dangers of these two drugs in combination are greater than of either one alone. He believes that the dangers are much too great to allow these two drugs to be used together except in the most desperate of cases and under the most carefully controlled experimental conditions. He states that various combinations of Apresoline, Rauwolfia and veratrum offer the safest and most effective medicinal regimen presently available. If instituted gradually they may be given safely in ambulatory patients with only weekly or even monthly checks of blood pressure. Because they can be used together in relatively small doses, these drugs in combination may produce a greater hypotensive action with fewer symptoms or side effects than can be produced by any one of them alone. They are all effective orally, they may be given in a four dose schedule, and they all appear to be active and well tolerated certainly for many months.

(3) *Humoral Antagonists.* Drugs which act as humoral antagonists have as yet not been particularly useful in the management of hypertension. Epinephrine blocking agents such as piperoxine and Regitine are specifically active in cases of pheochromocytoma, but such cases are rare. Apresoline is the only other humoral antagonist which is used and, although this antihumoral action is impressive in experimental animals, its action in humans appears to be principally central.

(4) *Vasodilators.* Except in cases of acute hypertensive crises where abrupt and marked control of blood pressure is desired (as in hypertensive encephalopathy), direct vasodilators such as the nitrites are not used in treating hypertension. Tolerance to them develops rapidly and side effects are usually quite severe.

Illustrative Cases

Several case histories will illustrate a plan of treatment and the results we obtained with the various drugs described above.

Case 1 (Fig. 2). W.D., a Negro male, age 29, whose illness began with bilateral costovertebral angle discomfort in 1949, without urinary symptoms. During the following 3 years he complained of increasing severe and frequent morning

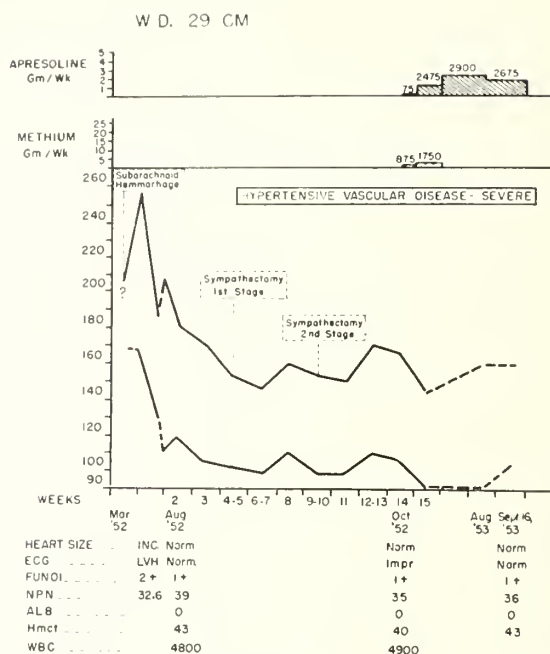


FIGURE 2

occipital headaches and occasional episodes of tinnitus and vertigo. There were no signs of cardiac insufficiency. In March, 1952, he suffered a subarachnoid hemorrhage and right hemiparesis. Blood pressure at that time was 258/168. He was treated symptomatically at another hospital with gradual and almost complete recovery. The patient was first admitted to the Thayer Veteran's Administration Hospital in May, 1952, at which time the blood pressure was 260/170. He was moderately obese. Fundi showed a group III change. Heart was enlarged, sounds of good quality, rhythm regular. There was a soft apical systolic murmur. Radial and pedal pulses were full and firm. Liver spleen and kidneys were not felt. Past history revealed that the patient had had a positive serological test for syphilis 2 months before admission and was treated with twelve million units of penicillin at another hospital.

Laboratory examinations showed a normal hemoglobin and urinalysis. PSP was 62% in 2 hours, NPN 32.6 mg. per cent. Kahn test was negative. EKG showed typical changes of left ventricular strain pattern. Benzodioxane test was normal. Sodium amytal test showed a marked drop to near normal of both systolic and diastolic pressures.

The patient was discharged improved without specific treatment with a blood pressure of 186/110. He returned to the V. A. Hospital in August, 1952, because of severe occipital headaches and blurring of vision. He also had mild dyspnea on exertion relieved by rest. The physical examination revealed a blood pressure of 210/140. Fundi had improved and now showed only group I changes. Heart was now of normal size with a soft apical systolic murmur.

Laboratory examination revealed a normal hemogram. Urine concentrated to 1.028, showed no albumin and a negative sediment; the NPN was 39 mg. per cent. The EKG was now normal. A two stage lumbodorsal sympathectomy was done with a drop in blood pressure to 150/100. The blood pressure rose during the next 3 weeks to 170/110.

Hypohex therapy was then instituted followed by lowering of the blood pressure to about 140/90. At this level he was receiving Apresoline 75 mg. every 4 hours except during hours of sleep and hexamethonium 125 mg. every 4 hours, if the systolic pressure rose above 140 mm. of mercury while the patient was sitting. Full ward activity was encouraged. He experienced only transient headaches at times when Apresoline was increased. Symptomatically he felt completely well. The examination of the urine, blood, NPN, PSP and EKG remained completely within normal limits. He was transferred to the Cardiac Clinic at Vanderbilt University Hospital in November, 1952. Here hexamethonium was discontinued and the blood pressure was maintained at levels averaging 160/90 with Apresoline 100 mg. every 4 hours except at night. This was reduced to 100 mg. 3 times a day in July, 1953. When last seen in October, the blood pressure averaged 160/100. He felt well and was working full time. Laboratory tests showed normal urine and blood examinations. The NPN was 36 mg. %, the EKG was within normal limits. The chest X-ray showed slight prominence of the aorta and left ventricular enlargement. He was able to do a full day's work without any symptoms.

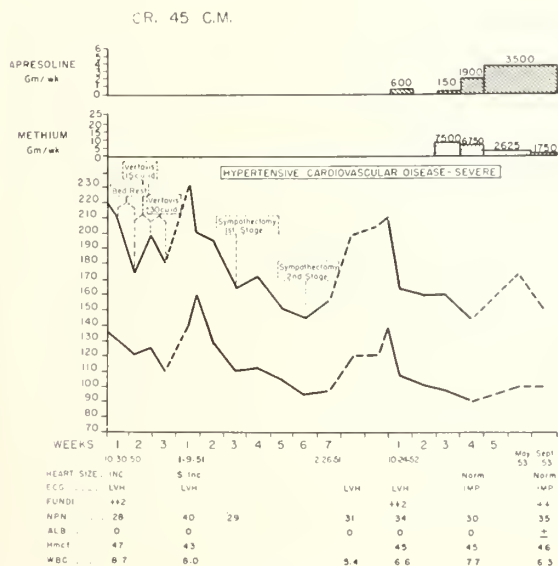


FIGURE 3

Case 2 (Fig. 3). C.R. is a 45 year old colored male. He was discharged from the army in 1945 because of hypertension. At that time he had occipital headaches every morning. In 1946

he developed mild dyspnea on exertion and he was treated in 1947 by a rice diet. By 1948 the exertional dyspnea was noticeably increasing and by October, 1950, he had orthopnea with edema of the ankles.

Because of this he was admitted to Thayer Veteran's Administration Hospital. The fundi showed group II changes. The heart was slightly enlarged and the sounds were of good quality, the rhythm was regular. The significant laboratory studies are indicated in figure 3. He was placed on a low salt diet, bed rest and veratrum viride and the blood pressure dropped from 220/130 to 180/110. He was discharged to continue a low salt diet and veratrum, but returned in January, 1951, with a blood pressure of 230/140.

Because there was definite evidence of vascular deterioration a two stage thoracolumbar sympathectomy was done and he was discharged in February, 1951, with a blood pressure of 155/95. (Fig. 3.) He was readmitted for examination in June, 1951. The heart size had decreased, but the blood pressure had returned to 200/120.

In July, 1952, he began having severe headaches, occasional vertigo and dyspnea. He was readmitted to the hospital in October, 1952. The blood pressure was now 210/140. Fundi showed group II changes. The heart size was slightly increased, the rhythm regular, sounds of good equal. There was a soft apical systolic murmur. Radial and pedal arteries were moderately thickened. The renal function was essentially normal.

He was placed at bed rest on a low sodium diet and the blood pressure was stabilized at 160/108. He was then started, slowly, on increasing doses of first hexamethonium, then Apresoline, with full ward activity, the blood pressure dropped to 150/90. There was some constipation easily managed with laxatives and an oral dryness was controlled by chewing gum. The patient was taught how to take his own blood pressure and was transferred to the Vanderbilt Cardiac Clinic in November, 1952, taking at that time 100 mg. of Apresoline every 4 hours except during the night and hexamethonium 250 mg. every 4 hours if the sitting systolic pressure was above 140 mm. of mercury.

He was last seen in November, 1953, feeling well and working daily. During the year small adjustments had been made in the drug dosage schedule and at the time of his last visit he was taking Apresoline, 25 mg. every 4 hours except at night and hexamethonium, 375 mg. every 4 hours if the systolic pressure was over 140 mm. of mercury. Renal function tests were normal; the EKG remained slightly abnormal, but improved over the tracing taken in 1950.

Case 3 (Fig. 4). J.K., a 52 year old white male with a history of morning occipital headaches, mild dyspnea for one year. He had nocturia twice a night but no history of urinary tract infection or hematuria. He was admitted to the Vanderbilt University Hospital in May, 1953, because

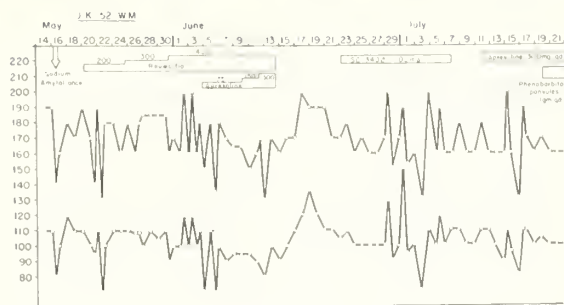


FIGURE 4

the blood pressure was found to be 240/140 in the arms and 250/145 in the right leg. Fundoscopic examination showed a grade II to III hypertensive retinopathy. The cardiac examination was normal. There was moderate firmness of the radial arteries.

Laboratory data showed a white blood count of 7,500 with normal differential, a PCV of 45; urinalysis showed a specific gravity of 1.017. There was a trace of albumin on one occasion and no further albuminuria. Renal function was good. There were no cardiac abnormalities. The Regitine test was negative. He received a sodium amytal test with a drop in pressure to 140/80. Throughout a 10 week hospital stay the drugs used and the blood pressure responses noted are described in figure 4. Rauwolfia was unattended by any undesirable reactions but produced no significant drop in blood pressure. SC 3402, a synthetic steroid capable of reducing the blood pressure in the experimental animal, was inert in this patient. He was given Apresoline 50 mg. every 4 hours (except at 2 A.M.) and 1 Gm. of phenobarbital Spansule every morning with stabilization of the pressure at about 160/105.

On this regimen severe headaches disappeared. Following discharge mild ankle edema recurred and he was digitalized. When last seen in September, 1953, he felt fine and was continuing on the above treatment with a blood pressure of 170/105.

Summary

Hypertension can be relieved for a long time in a number of patients by Apresoline, hexamethonium, Rauwolfia, veratrum and Hyphex.

The methods of using these drugs is described.

Most patients with hypertension need no treatment. The hypertensive drugs described are not without hazards, but are worth continuing until better methods appear.

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Here is an excellent review of indications for section.

INDICATIONS FOR CESAREAN SECTION*

ROY A. DOUGLASS, JR., M.D.,† Jackson, Tenn.

Today we live and practice in a time when childbirth is safe for both mother and child. Unfortunately, this has not always been true. In the past many mothers and many children have been lost due to complications which could be safely combated today. The medical profession has gradually developed many procedures which, when properly used, result in a great saving of both mother and child. These include antibiotics, blood transfusion, Pitocin stimulation, better care for cardiac patients, insulin, obstetrical forceps, cesarean section and many others. All these have combined to make pregnancy and delivery safer for the mother and infant than ever before.

There is considerable controversy over the country as a whole as well as in our own community, and possibly in your community, as to what place cesarean section has in the management of these complications. Formerly, it was a procedure fraught with danger for the mother and was used only as a last resort. Now with better anesthesia, antibiotics, availability of blood and better operative techniques, it has come to be a very safe procedure. Rightly, the use of cesarean section has increased greatly during the recent years. However, there is a growing tendency to use cesarean section in the management of all, or nearly all, obstetric complications. In institutions where this is the policy, ten, fifteen or even twenty per cent cesarean section rates are the result. The question has often been asked, "Why not do a cesarean section?", meaning, why not handle most of our obstetric complications in this manner.

Dangers of Cesarean Section

The most important factor against the unnecessary use of cesarean section is that the results in terms of mother and child are worse. Both maternal and fetal mortality rates are increased in cesarean section as compared with vaginal delivery. As we

mentioned above, cesarean section is now a safe procedure. Several clinics have reported over 1,000 cesarean sections without a maternal death. Yet vaginal delivery is even safer. In 1948, the maternal mortality over the entire country was 0.12 per cent. Reports from most clinics gave maternal mortality rates of 0.5 to 1 per cent in large series of cesarean section. Added to this is the danger during future pregnancies. While some disagree, most obstetricians use repeated cesarean section during subsequent pregnancies. Thus, when we do a cesarean section on a woman, not only do we increase her mortality chances with this pregnancy, but also with subsequent pregnancies. Then too, the mother on whom a cesarean section has been done is damaged. She has a scar in her uterus which not only indicates another cesarean section, but also endangers her life during subsequent pregnancies. I am referring to rupture of the uterus. While, fortunately, this feared complication is getting less and less due to better operative techniques and better wound healing due to antibiotics and blood transfusion, it still can occur. Reliable men report this incidence is from two to four per cent and state that this occurs around fifty per cent of the time before the onset of labor. Maternal mortality when this occurs varies from ten to thirty per cent.

Certainly one of the biggest fallacies is to say "do a cesarean section to insure a living baby." While many times a cesarean section is indicated to save either the life or health of the child, it by no means guarantees a living baby. Fetal mortality from vaginal delivery generally runs around three per cent. That from cesarean section, from five to ten per cent. It is true that some of these deaths are attributable to the complication necessitating the operation rather than to the operation. Yet investigations of elective subsequent cesarean sections show a higher fetal mortality rate than for uncomplicated vaginal deliveries. Presumably the fetus receives a stimulus to breathing during vaginal delivery which is not present during cesarean section.

*Read before the Meeting of the Tennessee State Medical Association, April 16, 1953, Memphis, Tenn.

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Another important consideration is the general limitation of pregnancies imposed on women who have had their children by cesarean section. Few women have more than three cesarean sections. Especially if one child does not live, this greatly limits her family. With many patients, this limitation is a blessing, yet with others it is not.

I hope you have not gotten the impression that I am against doing a cesarean section. Most certainly I am not, but I am against doing the unnecessary cesarean section, doing the cesarean section when by some other procedure a living baby can be obtained with no harm to the mother. I believe that cesarean section should be used in any case in which the attending physician feels that the chances for either the mother or the child will be greater by doing the operation than by allowing vaginal delivery to occur. Naturally, this will depend on the careful evaluation of the patient and there will be differences of opinion between different men seeing the same patient, but we should be able to set up some principles to guide us in the management of obstetric complications.

Obstetric Complications and Cesarean Section

Let us consider some of the more common obstetric complications and see where cesarean section is indicated. Of necessity, discussion of each will have to be brief.

1. *Previous Uterine Incision.* This will make up the largest single indication for cesarean section in any group. Of course, it is in the woman who has had a previous cesarean section. I feel that almost all of these women should have subsequent cesarean section. As we mentioned before, one of the dangers of cesarean section is that of rupture of the uterus in subsequent pregnancies. While this may occur at any time during the latter half of pregnancy it is more likely to occur during labor. In some of our teaching hospitals, by careful selection of patients, they are allowing a fairly high percentage of women who have had a cesarean section to be delivered vaginally during subsequent pregnancies. They have been reporting very good results from this as far as maternal and fetal loss is concerned. Patients are carefully selected on the basis of no disproportion, a cervical incision during the previous cesarean section and an

afebrile postoperative course. The patient is constantly attended by a physician and the operating room is constantly available as is blood. While their results are good, I personally feel that in the setups which are available to the majority of us this is not practical and too dangerous. Should a rupture of the uterus occur in most of our hospitals, we would not be able to operate in time to save the baby.

Occasionally we encounter a patient who has previously had a myomectomy and is now pregnant. Subsequent pregnancies should be managed depending on whether or not the endometrial cavity was entered during the myomectomy. If it is known that the endometrial cavity was not entered, then the pregnancy can be carried out as any other pregnancy, vaginal delivery being indicated unless other indications for cesarean section should arise. If it is not known whether the endometrial cavity was entered or if it is known that it definitely was entered, then any subsequent pregnancies should also be delivered by cesarean section.

2. *Disproportion and Inertia:* Except for the indication of a previous uterine incision, this will undoubtedly be the largest single indication in any group of patients. It will also be one of the hardest to diagnose, one of the hardest to take care of and one of the most difficult situations in which to make the proper decision. We have, of course, three main factors determining whether any woman will have a baby vaginally. They are the baby, the pelvis and the amount of force which the uterus will generate during labor.

I feel that we should stop using the word contracted pelvis and substitute the words *cephalopelvic disproportion*. When we say that a pelvis is contracted or that a pelvis is adequate, what is it contracted against or what is it adequate for? A pelvis which we might deem contracted could conceivably be adequate for a five pound baby and on the other hand the patient's pelvis which we thought adequate could be too small for a baby of ten or eleven pounds. While we can measure fairly accurately the pelvis both by vaginal examination and by X-ray pelvimetry, our estimation of the size of the baby

is much more difficult and can only be approximated.

Likewise, we have no idea as to how much power the uterus will generate until the patient is in labor for several hours. I believe it will be rare indeed, that we will see a patient with a pelvis so small that a cesarean section will be indicated without a trial of labor. The last statement is assuming that the fetal position is good, that is, that the vertex is presenting. We will have more about abnormal presentations later. If we see a patient with a small pelvis or an overly large baby with a vertex presentation, then our management of that patient should be to let her go into labor and see what she does. Assuming that she has a good fetal position, then the secret of her ability to deliver will be in the amount of power which the uterus will generate. This will be a matter of close observation of the uterine contractions, their frequency, their duration and the amount of force with each contraction.

We do know that where there is a close fit between the head and the pelvis uterine inertia frequency develops. If inertia develops in what I would like to call *relative cephalopelvic disproportion*, it probably will be advantageous to the patient and to the baby to do delivery by cesarean section. On the other hand when such a patient has a good forceful labor as long as progress occurs, dilatation progresses and the head descends, then labor should be allowed to continue. How long to allow a patient to have such a trial of labor is a problematical question. Certainly I think that any patient in the above situation should have at least twelve hours of labor; probably very few of them should be allowed to labor over 24 hours unless the patient is making progress during all of this time. Should the inertia develop in a patient in whom there is no question of cephalopelvic disproportion and in whom the pelvis appears to be perfectly adequate for the child concerned, Pitocin stimulation then can be a very worthwhile procedure. As you know, Pitocin or pituitrin has fallen into disrepute during the years because of a number of unfortunate accidents which have happened following the hypodermic administration of small doses.

During recent years, the method of Pitocin stimulation by intravenous drip has been employed with very satisfactory results. This can be given to the selected patient by putting either 5 or 10 minims of Pitocin in 1,000 cc. of 5 per cent glucose in water and giving this intravenously at a rate starting around 30 drops a minute. Depending upon the reaction of the patient's uterus, the rate can be increased or decreased as necessary. By this method only a half to one minim is usually given during the first hour. It will rarely cause tetanic uterine contractions. Should such a contraction occur the Pitocin effect can immediately be withdrawn by stopping the intravenous drip. Certainly this method of stimulation of labor can be used with almost complete safety to the mother and child and can do much toward reducing the incidence of cesarean section in these cases. It should not be used where good labor is already present or where there is a question of cephalopelvic disproportion.

3. *Bleeding*: Probably nothing frightens the obstetrician, certainly nothing frightens me more, than a patient at or near term with profuse vaginal bleeding. Here the diagnosis primarily lies between placenta praevia and premature separation of the placenta. There will not be time nor place here to discuss the differential diagnosis between these two conditions.

When the diagnosis of premature separation is made, the baby should be delivered fairly rapidly. By this, I mean certainly within 3 or 4 hours at the most. The best method for doing this will depend upon the condition of the cervix. If, and as frequently occurs, the patient is already in early labor, the patient is a multipara, the cervix soft and 3 or more centimeters dilated, then I think that the best treatment is immediate rupture of the membranes with vaginal delivery usually occurring in a rather short period of time. If, however, the patient is a primipara with little dilatation, or a multipara with a long hard cervix dilated not over 2 centimeters and a living baby, cesarean section would probably be the treatment of choice. In the presence of a dead baby, cesarean section should not be done if vaginal delivery can be easily accomplished. Sometimes, even in the presence of a dead

baby, with a long thick cervix and either a primipara or a multipara, the patient in a poor condition from blood loss, cesarean section may be a life-saving measure to the mother. However, not infrequently we see patients, even primigravida with a dead baby, with not over 1 centimeter of dilatation and with a definite premature separation of placenta who are in good condition. As long as the condition remains good these patients may be treated with artificial rupture of the membranes often with good success. Also in such cases Pitocin stimulation has a definite place in hastening vaginal delivery. (It should be used in the same method as described above.)

When the diagnosis of placenta praevia is made and the patient is still in good condition and bleeding is not excessive, there is no reason for immediate delivery. If the patient is not near term and one is suspicious that the baby may be too small for survival, delivery can be awaited up to a period of several weeks, if necessary, in order to insure the delivery of a living child. Of course, this expectant management is dependent upon the bleeding not being excessive and not endangering the mother's life. If the patient is in labor, or the bleeding is excessive so that the life of the mother is in jeopardy, delivery should be carried out. Again, delivery depends primarily upon the condition of the cervix. In the presence of a partial placenta praevia, if the patient has a soft cervix partially effaced and dilated 2 to 3 centimeters or more with a vertex presentation, bleeding can usually be immediately controlled by rupture of the membranes, allowing the fetal head to settle down against the cervix clamping the placenta between it and the cervix. In most cases, this will immediately stop the bleeding and will usually start labor and vaginal delivery will usually occur anywhere from 2 to 12 hours. Should it happen that 6 to 8 hours go by without labor starting, labor can always be induced by Pitocin stimulation by intravenous drip. This procedure can also be very effective in the primigravida as well as in the multigravida. Should excessive bleeding occur in the presence of a thick undilated firm cervix, regardless of whether the patient be primigravida or mul-

tigravida, I believe that cesarean section is the treatment of choice. In the case of a central placenta praevia cesarean section should be done. The Willett's forcep is an instrument which may be useful in managing either one of these conditions where labor does not ensue readily and in which vaginal delivery is preferred. I do not believe that such measures as a bag or Braxton Hicks' version has any place in the management of either one of these conditions. In managing patients with bleeding as mentioned above, I feel we can obtain just as good or better results in terms of fetal and maternal mortality and morbidity as could be obtained by managing all, or nearly all, of such complications by cesarean section. However, I would like to caution here that I am not trying to say that cesarean section has no place in the management of these complications. I feel that in any large group of such patients cesarean section would probably be indicated in about 30 per cent of cases.

4. *Abnormal Fetal Position:* On occasion, abnormal fetal positions may be an indication for cesarean section. A posterior position should not be an indication by itself. It may be associated with a uterine inertia or cephalopelvic disproportion in which case, if it persisted during labor it might make impossible a vaginal delivery which would otherwise occur if the head were in an anterior position. In such a case with inertia and disproportion also present, cesarean section is frequently indicated. Face, brow and transverse presentation are occasionally indications for cesarean section. There will not be time here to go into much of a discussion of these conditions. I would like only to state that in the face presentation the axiom "as long as the patient is making progress let labor continue" is the best and safest method to follow and with such an expectant management, the majority of our face presentations will deliver themselves. Occasionally forceps rotation is necessary of persistent chin posterior positions when the cervix is completely dilated, but the majority of such face presentations will deliver either spontaneously or by an easy low forceps delivery.

Cesarean section will be indicated only

where disproportion or inertia is present or where a persistent chin posterior is present in the primigravida. One situation which is a great problem to me is the management of the breech presentation in the patient with a small pelvis. Here a trial of labor tells little. If the patient has previously had a child as large or larger than we think the present child is, then we can probably safely allow vaginal delivery to occur. If she is a primigravida, or only had smaller children before, by careful evaluation of the pelvis and trying to estimate the fetal size one must decide whether to attempt vaginal delivery or to do a cesarean section. Where there is any doubt, I feel that cesarean section would be preferable. However, even in the primigravida, I feel that a breech presentation is rarely an indication for cesarean section, for the majority of such women will have a pelvis large enough to allow an uncomplicated delivery to occur.

5. *Toxemia*: I put this in not because I think it is an indication for cesarean section but rather I think it is almost a *contraindication* for cesarean section. Certainly, acute toxemia is a contraindication unless other obstetrical emergencies arise which make it necessary. The toxemic patient, particularly the eclamptic, is in no condition for operative procedure. These are the patients that die on us. Rather, I feel that the toxemia should be controlled for a period of 48 to 72 hours before considering delivery. If labor can be induced by stripping the membranes or Pitocin stimulation in the case of a favorable cervix, then it should be done. However, if the toxic patient has a long closed hard cervix, then cesarean section will be indicated. I would like to point out that the indication for the cesarean section is a method of delivery and not because the patient is toxic.

6. *Other Indications*: Certainly we cannot even begin to mention here all the conceivable situations which could possibly indicate cesarean section. Some conditions in which it may be indicated are an obstructing pelvic tumor such as a fibroid, a double uterus or ovarian tumor in front of the head. Known carcinoma of the cervix should be an indication for cesarean section. Cesarean section is more frequently done in the dia-

betic patient and again the situation exists which exists in toxemia. The diabetes is not the indication but rather the delivery of the infant before term is sometimes the indication and often the only feasible method of doing this is by cesarean section. Cervical dystocia secondary to cervical cauterization or amputation may sometimes be encountered. Here again, I feel that the patient should be treated in a similar manner to the patient with question of disproportion or inertia, allow labor to occur and if dilation progresses let vaginal delivery occur. If with good labor dilatation does not occur, cesarean section can always be done. The incidence of cesarean section will be increased in the primigravida over 35 years of age, but this should not be an indication by itself.

Lastly, I would like to mention some situations which are frequently used as indications for cesarean section, yet which actually are not indications. Heart disease has frequently been given as the reason for delivering a patient by cesarean section. Certainly this is actually just the opposite to what we desire to do. A cardiac patient who is not decompensated can stand labor very well and can stand the labor much better than she can stand a cesarean section. The patient who is in heart failure or has been in heart failure in the past offers no indication. The maternal mortality rate in such situations when cesarean section is carried out has been reported by reliable sources as 10 times as high as the maternal mortality rate where vaginal delivery is allowed to occur. Unless another indication for cesarean section arises, this is not one. The same thing can be said for tuberculosis. These patients stand vaginal delivery with shortening of the second stage of labor and delivery under regional anesthesia by low forceps, much better than they stand cesarean section. Other situations which have been used as indications but which are not, are the patient's request and, *how often this one has been abused*, desire for sterilization, Rh incompatibility and others. If sterilization is indicated in an individual patient, it is much safer for both mother and child to allow vaginal delivery to occur, assuming there is no contraindication to this and then

carry out the sterilization procedure within two days after delivery.

Summary

Cesarean section, when judiciously used, is an important weapon in the reduction of maternal and fetal mortality. However, unfortunately it is now frequently used as a replacement for good obstetrical judgment and instead of skillful, yet safe deliveries from below. By carefully individualizing each patient, by electing cesarean section only when it offers a better chance for mother and child than vaginal delivery, can we actually bring an even lower maternal and fetal mortality. While it is labelled as a safe procedure, cesarean section should not be entered into lightly. Any attending physician should carefully weigh the indications for such a procedure before he carries it out, for maternal and fetal mortality are both increased in the uncomplicated cesarean section as against the uncomplicated vaginal delivery. In certain instances of complicated obstetrical cases, cesarean section is indicated as a life-saving measure for either mother or child.

Discussion

W. O. TIRRILL, M.D. (Nashville): Mr. Chairman: It is both a privilege and a pleasure to open the discussion on this excellent paper by my good friend, Dr. Roy Douglass.

This presentation is most timely, since the author emphasizes a conservative policy where conservatism is justified, yet is not at all in favor of continuing expectant conservative treatment wherein the life or future well-being of either mother or infant seems to be in danger. Such advice, if followed, will surely keep obstetricians from performing unrequired cesarean sections without increasing the incidence of those hazardous and difficult vaginal deliveries of former years. Dr. Douglass' paper would be just as enlightening to a society of specialists in obstetrics as it is to this statewide group of general physicians for the subject has been investigated thoroughly. During the last twelve years, cesarean section has shown an increased incidence as a method of safe delivery for the baby of the mother who might have been severely traumatized by vaginal delivery. However, I do not believe it is proper treatment, for those of us who perform sections, to operate upon a woman referred from a distance to us for section before she has received the benefit of a thorough obstetrical re-evaluation of her individual pregnancy problem. At times, such re-evaluation will determine that section is unnecessary, and vaginal delivery indicated and not too difficult.

The question of permitting vaginal delivery following a section depends largely upon the condition for which the section was performed, the type of convalescence, and accepting the work of the former operator. Meanwhile, much anxiety is associated with constantly attending a previously sectioned patient in labor. The operating room must be set up and there must be proper blood and assistants available. Such a set-up is possible only in our larger obstetrical units. Therefore, it seems preferable to perform elective subsequent section upon such cases.

The performance of a section to insure a living baby where there is not other indication for section is not justifiable! Dr. Douglass has told us infant mortality from section runs about 5-10% as compared with 3% for vaginal delivery. The so-called hyaline membrane in the infant's respiratory system often offers a serious new-born care problem in our babies delivered by section, especially if prematurity exists or the mother is a diabetic. This condition is less frequently observed following vaginal delivery, in which the forces of labor contractions seem beneficial.

Cephalo-pelvic disproportion usually shows an incidence of about 30% in any series of cesarean sections. Yet, a great many of these cases are border-line and would deliver safely if supported in an adequate trial labor. Re-evaluation of the individual case in labor is all important! However, cesarean section is advocated should progress cease or the life of either mother or baby become endangered.

Pitocin drip infusion as stated has a definite place in our uterine inertia case after we are sure no disproportion exists, the presentation is acceptable, and the mother has received fluids and rest. Abdominal section is advisable in central placenta praevia and in uncontrolled active vaginal bleeding. Examination of the condition of the cervix prior to any section is indicated for at times prompt safe delivery follows simple rupture of the membranes. Properly matched blood must be available! I would like to ask Dr. Douglass if he considers it wise to stimulate contractions with pituitary drip infusion in placenta praevia? This is a minor point, but pituitary drip should be used with great caution in this condition. Wouldn't it be possible to cause further detachment of the low lying placenta in the non-contractile portion of the uterus, thereby causing greater man-made bleeding? I would be more favorable toward employing section in such a case. A tight intra-uterine gauze packing to control bleeding from vessels in the lower uterine segment is useful during section in placenta praevia cases. This packing is removed from below within 24 hours.

I am in complete accord with the authors' advice as to management of eclamptogenic toxemia, the patient with breech presentation, especially if elderly and with a borderline pelvis, fibromyomata and other tumors, pregnancy in the diabetic, cardiac and tuberculous woman, in cases of serious

malposition, and the patient with extensive genital tract repair.

A written consultation by a qualified confrere, as a courtesy to the physician in charge of the case, is helpful before section on every obstetrical service. Advocating broader use of cesarean section may be good teaching for the trained obstetrician, but is dangerous advice for the general phy-

sician. When in doubt, the family physician might find it most helpful to call a specialist in obstetrics in consultation, rather than decide for himself that abdominal delivery is the solution to his obstetrical problem. This consultation will be mutually beneficial to the patient and her family, the physician in charge of her case and the consulting obstetrician.

Rheumatic and Febrile Syndrome During Prolonged Hydralazine (Apresoline) Treatment, Dustan, H. P., Taylor, R. D., Corcoran, A. C., and Page, I. H., J.A.M.A. 154:23, 1954.

The authors express their experience as favorable with the use of Apresoline as a hypotensive drug. They have found the toxic side effects, as commonly described, to appear and disappear as the drug is used. Anemia is sometimes encountered.

In using large doses of the drug prolonged periods, the authors have encountered a complication of therapy suggestive of the clinical picture of rheumatoid arthritis and even acute disseminated lupus erythematosus. This complication has been experienced in 13 of 139 patients who received large doses of Apresoline (400-800 mg. daily) as the sole hypotensive drug. Large doses were used because they gave satisfactory control of hypertension in this group. Eleven of the 13 had had an excellent effect in this regard.

Extensive laboratory studies pertinent to the study of rheumatoid arthritis and disseminated lupus were carried out. The mean time of onset of complicating symptoms was at 12 months of therapy, one had been on treatment for 22 months before manifestations appeared. Only 6 of the 13 gave a family history of allergy or had experienced such manifestations themselves.

Eight of the 13 showed the rheumatic phase,—migratory arthralgias, referred to interphalangeal joints of hands, and less often wrists, elbows, shoulders and knees. Joints were stiff, warm, tender and in the more severe instances were red and swollen. Slight anemia developed, the sedi-

mentation rate was increased in some, and serum albumin was lowered with an increase in alpha and gamma globulins,—changes reminiscent of acute lupus. One patient had fever. Four of the eight were disabled by arthritis.

Antihistaminics, salicylates, ascorbic acid and other medications were ineffectual in controlling the symptoms. Cortisone or ACTH gave symptomatic relief. In one patient with malignant hypotension with recurrence on stopping Apresoline, it and Cortisone both were used but eventually the toxic symptoms appeared in spite of Cortisone. Withdrawal of the hydralazine relieved all patients of toxic symptoms as quickly as within 24 hours and as belatedly as 4 weeks. All patients had a recurrence of the rheumatic state on re-exhibition of the drug.

Five patients showed the "febrile phase" resembling systemic lupus. Average duration of therapy had been 17 months. The rheumatic state was ushered in by fever as high as 105° and chest and abdominal pain. Three had pleural and pericardial effusions; one had pneumonitis and one erythematosus. Recovery took place after Apresoline was discontinued in three of the five; two were given steroid hormone therapy and one of these has needed to continue this therapy for control.

One of the five had L.E. cells in the plasma and one other had them and rosettes in the bone marrow. (Of interest is the fact that one other patient on Apresoline, not of this group, had a positive plasma L.E. test without other evidences of the syndrome.) Focal perivascular round cell collection demonstrated in muscle biopsy, lesions as occur in the collagen diseases.

The author considers briefly the diagnosis of pulmonary tuberculosis and the medical and surgical management.

PRESENT DAY TREATMENT OF TUBERCULOSIS

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Those of us engaged in the care and treatment of tuberculosis, and this includes practically all physicians, have much to be thankful for. The decrease in infectivity, morbidity, and mortality has been very gratifying. Since 1900 there has been a decrease in the mortality rate from tuberculosis from approximately 200 per 100,000 persons to less than 20 per 100,000 of the population. The infectivity rate, however, continues at 50 per cent or higher as demonstrated by tuberculin skin reactions.

Tuberculosis continues to be a challenge to the profession and, at present, is the most common cause of death in persons between the ages of 15 and 35 years. Contrary to ideas held 30 years ago, it is becoming a disease of older age groups, especially of males in the sixth and seventh decades of life. This fact assumes even greater importance when one realizes that other pulmonary diseases, particularly bronchogenic neoplasms, also are increasing in incidence in this same age group.

Latest public health figures show that there are some 400,000 persons in the United States with open and active pulmonary tuberculosis. Of this number only 200,000 are known and followed by our public health agents. Slightly more than one-half of these known cases are now hospitalized in the 125,000 beds available for the care of such patients. The remainder of these 400,000 persons are more or less free to release viable tubercle bacilli in their immediate environment, providing an inestimable hazard. This fact, when considered with reference to the 75,000,000 individuals who are infected with viable pathogenic tubercle bacilli as shown by positive skin tests, gives the physician reason to stop, think and search for possible tuberculosis in every patient he sees.

It is the purpose of this paper to briefly review methods of diagnosis and present day medical treatment of pulmonary tuberculosis.

Diagnosis

Thorough history taking and physical examination may often give a clue or make the presumptive diagnosis of tuberculosis possible. Skin testing, serial chest x-ray, studies careful sputum examination, gastric concentrates and cultures, and guinea pig inoculation, can in most instances confirm a diagnosis of tuberculosis in the early or minimal stage.

The use of the serial chest x-ray examination and careful follow-up of persons who show evidence of pulmonary abnormality offers the best chance to diagnose pulmonary tuberculosis in its minimal stage. However, in individuals whose chest x-ray is repeated once a year, only 70 percent of persons thus diagnosed will have minimal disease. The remaining will show more advanced disease and some 15 percent will show evidence of cavitation. Less than 15 percent of new patients now being admitted to our sanatoria have minimal pulmonary tuberculosis, and more than 50 percent have far advanced disease. It would seem that two factors, (1) insufficient number of hospital beds and (2) failure of early diagnosis, are responsible for this unfortunate situation.

Treatment

The basic form of management of tuberculous disease continues to be *bed rest*, preferably in a hospital with trained personnel. The duration of this basic treatment varies considerably from place to place, but generally is continued for at least three months after x-ray films of the chest show no change, cultures are negative and the temperature is normal.

Great advances have been made recently in the fields of antibiotic therapy and surgical technics. Since the advent of the isonicotinic acid derivatives there has been considerable optimism in the lay press as well as in medical circles.

The *chemotherapeutic agents*, however, which are effective against the *Mycobacter-*

ium tuberculosis are few. Of the numerous preparations studied recently the majority, with the exception of Promizole, streptomycin, Viomycin, the isonicotinic acid derivatives and para-amino-salicylic acid, have proven either too toxic or ineffective. Of these, Promizole is relatively weak in its antituberculous activity and is somewhat toxic when taken for long periods of time.

The antimicrobial therapy most widely accepted in treating tuberculosis at the present time is prolonged treatment using intermittent streptomycin and continuous PAS (para-amino-salicylic acid). The streptomycin is given in a dosage of one gram two or three times weekly, and the PAS is given in a total of 12 grams or to tolerance. As there is commonly some gastric irritation it is usual to give the PAS with meals.

The duration of such therapy varies with the individual patient. Generally speaking, a minimum of four months treatment is indicated, but most phthisiologists are treating the patients for at least eight months and some for as long as two years.

The place of isonicotinic acid derivatives in the treatment of tuberculosis has not been determined. Certainly it seems that this drug is a useful one, and various studies using this preparation alone or in combination with streptomycin and/or PAS have been quite encouraging. The British Medical Research Council, as well as some clinicians in this country, is even now conducting clinical trials with large numbers of patients using Isoniazid alone and in combination with other agents. Early results of the British study tend to show that patients given Isoniazid (100 mg. twice daily) and streptomycin (one gram daily) in combination show more clinical, radiographic and bacteriologic improvement than with any other single agent or combination of chemotherapeutic agents yet tried. It should be emphasized that these results are not conclusive and it is impossible to say at the moment just what the dosage schedule or duration of treatment should be, or if any late toxic effects might appear.

The results from treatment with accepted chemotherapeutic agents has in many cases been very gratifying. It is true that areas of tuberculous disease which are primarily exudative are more readily reversible and

show more evidence of improvement with such treatment. However, in many cases there still remain areas of residual disease, cavitary and necrotic, which make close cooperation between physician and surgeon desirable.

Numerous studies have shown beyond doubt that residual areas of disease in the lung, even after long term antibiotic therapy, contain tubercle bacilli. It has also been shown that in most cases these tubercle bacilli are incapable of growing on cultural media or of producing tuberculous disease in the guinea pig. But it is certainly not proven that these organisms will never again produce active tuberculosis in the human. It is because of this possibility of reactivation and infection that there is a strong trend towards surgical removal of these residual areas of diseases.

The place of *surgery* in the treatment of pulmonary tuberculosis is unsettled. There are those thoracic surgeons who favor early and extensive removal of all diseased areas and certain normal surrounding tissue after preparation with short term antibiotic therapy. The majority of such surgeons, however, tend to favor resection of only the residual areas of disease after long-term antibiotic therapy. While pneumonectomies and lobectomies will undoubtedly continue to be important and useful procedures, many surgeons are limiting their resections to segmental resections, wedge resections, block resections, and enucleations.

The conventional forms of reversible collapse therapy such as pneumothorax, pneumoperitoneum and temporary phrenic nerve interruption, especially the latter two in combination, continue to hold a definite place in the treatment of tuberculosis, either with or without antibiotic therapy.

Summary

In spite of a decreasing mortality rate in tuberculosis, it still remains the most common cause of death between the ages of 15 and 35 years. The value of chest films in early diagnosis has been emphasized. Chemotherapy and surgery continue to offer the major attack on pulmonary tuberculosis, but much remains to be learned before a final evaluation of these therapeutic tools can be made.

CASE REPORT

Fibrous Sternocleidomastoid Tumor of Infancy*

G. E. Horsley, M.D., Naomi Pitman, M.D., and
J. D. Schuler, M.D.,† Madison College, Tenn.

Case Report

J.W.J., a one month old male infant, was first seen August 11, 1952, with a history of marked fretfulness for the preceding week. For 3 days the mother had noticed that the child kept its head turned to the right and seemed to cry and fret if the head was turned to the left. The day before admission the swelling in the right side of the neck was first noticed. The child had had a normal, easy, cephalic birth in spite of the 8 lb. 4 oz. weight. The mother was a healthy twenty year old primipara.

Examination revealed a vigorous, crying male infant of 9 lb. and 5 oz. No abnormalities were noted except in the neck. The head was turned moderately to the right though it could be turned actively or passively in a full range of motion. A firm, smooth, fairly discrete 3 x 4 cm. sized mass was palpable in the middle third of the right sternocleidomastoideus muscle. The mass was freely movable in the lateral plane under the skin but could be moved only slightly in a vertical direction and seemed fixed to the muscle. Blood and urine laboratory reports, and x-ray of the chest were normal.

A tentative diagnosis was made of *sternocleidomastoideus tumor*, benign or malignant. Branchiogenic cyst was considered though the tumor did not feel cystic.

Through a transverse incision over the tumor the sternocleidomastoid muscle was exposed. A 2.5 x 2.5 x 3 cm. sized greyish, white firm rubbery mass was found to have largely replaced the belly of the muscle and to merge imperceptibly with the recognizable remaining muscle strands. Nothing suggestive of a hematoma was seen. A separation was developed with a small Kelly forceps between the definitely tumor tissue and the fibrous but recognizable remaining muscle tissue and the mass was excised. A frozen section was reported as probably benign fibroma, possibly ganglioneuroma, so it was decided to leave the remaining small portion of the muscle in the hope of preserving its function. The spinal accessory nerve was not disturbed. Postoperative massage and passive exercises in all directions were practiced by the mother for one month. Within a week

after surgery the child was asymptomatic and has remained so.

Pathological Report: "Specimen from tumor mass of the right side of the neck consisted of a firm mass measuring 2.5 x 3.0 x 1 cm. The cut surface was greyish white in color and moderately firm but not hard.

"Microscopic: Section through tissue from the mass removed from the right side of the neck shows for the most part spindle-shaped cells that show evidence of proliferation in some areas. Also scattered through this connective tissue, in some areas, are partially degenerated voluntary muscle cells, some of which show cross striation to be still present. Around these degenerated muscle cells there is some infiltration with lymphocytes. Also around the blood vessels in some parts of the section there is more or less infiltration with lymphocytes and a few polymorphs. Attached to the outer surface of the mass in some areas there are bundles of fairly normal appearing striated muscle. In some areas the fibroblasts are hyperplastic and show a few mitotic figures but these changes are not as marked as sometimes seen in granulation tissue. The fibrous connective tissue cells there are so well-differentiated that I do not believe that this tissue is from a fibrosarcoma but rather a fibrous replacement associated with some chronic inflammatory changes of the body of the sternocleidomastoid of the right side of the neck."

Discussion

Congenital muscular torticollis is rare, occurring about once in 150,000 births, about one-tenth as common as clubfoot. There is no racial or sex predisposition. The right side of the neck is affected slightly more often than the left.¹ It is occasionally associated with other congenital deformities such as Erb's palsy, clubfoot or maldevelopment of the ear.² Occasionally the torticollis is bilateral.³

The natural history of these tumors is described by Middleton,¹ Hulbert,⁵ and Chandler¹ on the basis of 90, 117 and 225 cases respectively. The mass usually appears after 10 days of age as a fusiform swelling in one sternocleidomastoid muscle. It may increase in size for two to four weeks, remain stationary two or three months, and then gradually regress so as to disappear by four to eight months of age.

The tumor is firm, often cartilaginous, not cystic or fluctuant and does not resemble a hematoma. When the tumor disappears the muscle feels short and fibrous, and usually the tissue at the site is converted his-

*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, April 13, 1953, Memphis.

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tologically into scar tissue. When the tumor is at its height a transient torticollis may be present, but persistent torticollis does not usually develop until the third or fourth year of life when the short neck of infancy lengthens into that of the child. Occasionally it is years after the tumor has regressed and been forgotten before torticollis with associated skeletal deformities, exostoses of clavicle and mastoid, or facial asymmetry develop. Approximately 20 per cent of patients with torticollis give a history of a recognized tumor on the affected side.

Pathogenesis

A definite cause of these tumors has not been found. The theories based on neurogenic disorders, hematoma formation and vascular occlusion have been largely discarded. Trauma has been regarded as the most important etiological factor, especially in breech presentations, prolonged labor, sometimes fractures of the upper extremities and in the shoulder girdle. Abnormal position of the fetus in utero with marked lateral flexion of the neck and possible vascular compression may be a more important factor.⁶ In our case being reported the delivery was short and uneventful in spite of the size of the infant.

Whatever the primary cause, the actual tumor is in no sense a neoplasm but the result of fibroblastic replacement of muscle, like a callus frequently seen at the site of fractures occurring at birth.

Differential Diagnosis

When confronted with a tumor of the sternocleidomastoid muscle in the infant, it is comforting to know that there is no record of a single authenticated case of fibrosarcoma of the sternocleidomastoid muscle in infancy. This includes the registry of the American Academy of Pediatrics, and the files of the Children's Medical Center in Boston.^{7,8}

Treatment

The older method was and still is conservative watching, massage and passive and active exercises with surgery reserved for the sequellae of the tumor. This treatment is advocated by Key⁹ and Hubert⁵ and is based on the fact that only 20 per

cent of these tumors result in deformity, and that no case of malignancy has been recorded. Chandler and Altenberg,⁶ as well as others recommend early prophylactic removal of the diseased muscle whenever a tumor is present on the basis of uniformly good results.

Summary and Conclusions

A typical case of sternocleidomastoid tumor of infancy is presented with a brief review of the literature on this condition. This single case hardly permits the drawing of conclusions. However, the ease with which the tumor was removed and the immediate excellent results do incline one to listen favorably to Chandler and other enthusiastic proponents of the early prophylactic removal of the diseased muscle whenever a tumor is present.

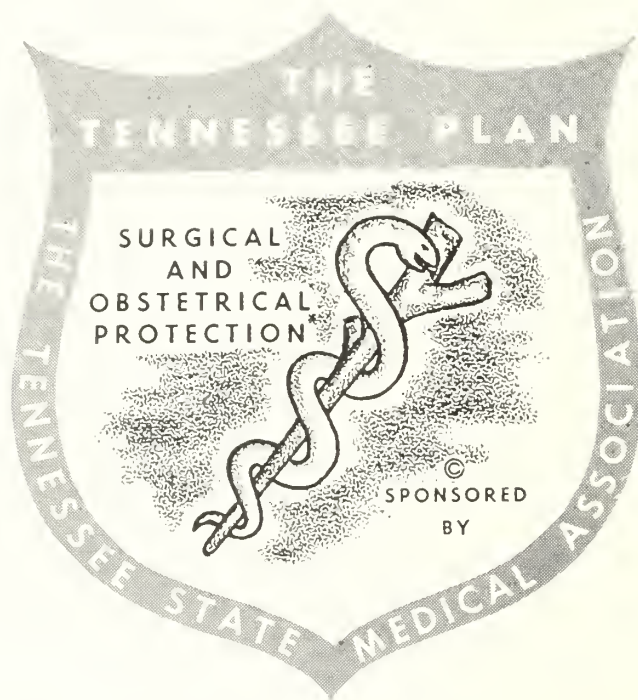
On the other hand it seems difficult to justify subjecting of an infant to the risk of a general anaesthetic and the possibility of injury to his spinal accessory nerve for a condition which resolves spontaneously without sequellae in fully 80 per cent of the cases. The 20 per cent which eventuate in muscular torticollis can be satisfactorily treated between the ages of two and four by excision or lengthening of the involved muscle as described by Key.⁹

Our own conclusions from this case and a study of the literature are that if the infant simply presents a sternocleidomastoid muscle tumor without any symptoms, conservative management is indicated. However, if the tumor is causing distress as evidenced by constant crying, restlessness and refusal to lie on the other side of the body then excision under general anesthesia is the treatment of choice.

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STAFF CONFERENCE

John Gaston Hospital*

DR. HARWELL WILSON: Gentlemen, our case for the surgical conference this afternoon is that of a patient who presents a difficult problem in the management of burns. This case presents a number of difficult and unusual features which may be encountered in the general treatment of a burned patient. Dr. Duncan, will you present to us the history and the physical findings in this patient?

DR. J. T. DUNCAN: This 14-year old white male was healthy until approximately four hours prior to his admission to this hospital 10 days ago. At that time he received severe burns of both lower extremities when his trousers were ignited as a result of a gasoline explosion.

Physical examination showed second and third degree burns involving both lower extremities. These were estimated to cover approximately 15 per cent of his total body surface area. His temperature was 98.6° F., pulse 96, respiration 24 and blood pressure 140/80.

Since the burns of the legs were circumferential, it was decided to treat these by the closed method. The legs, therefore, were gently debrided and dressed. After this had been done 1000 cc. of 5 per cent glucose and saline solution was given intravenously while blood was being made available. He next received 500 cc. of plasma and this was followed by 500 cc. of whole blood.

Shortly after the blood transfusion he became nauseated, vomited profusely, and had a severe chill. The blood pressure which had been 140/80 on admission dropped to 70/0, the pulse accelerated from 96 to 120 per minute, and his temperature rose to 106.4° F. (R). Despite all efforts to elevate his blood pressure for the next 36 to 40 hours he remained cyanotic, oliguric, and with blood pressure below 90/60 except for infrequent and sporadic rises from 90/60 to 120/80 for brief periods only.

During this time he was extremely restless and semicomatose, and his temperature hovered around 103° F. to 105° F. Examination now revealed definite small generalized petechiae, a left subconjunctival hemorrhage, and large ecchymotic areas where he had been receiving hypodermic injections.

By the end of 60 hours, this patient had received some 11½ liters of intravenous fluids and blood as treatment for his burns and in an effort

to combat his persistent hypotension. At the time of a hematology consultation with Dr. Diggs the patient actually appeared moribund. In addition to the previously mentioned physical findings, by this time his abdomen was markedly distended necessitating nasogastric suction which aspirated large quantities of bright red blood. Dr. Diggs stated unquestionably that he thought the patient's condition was due to some massive thromboembolic process. Blood studies by his department revealed a thrombocytopenia, prolonged coagulation and bleeding times, defective clot retraction, azotemia with a NPN of 108 and a hemolytic type of jaundice with the total serum bilirubin being 5.6 mg. A blood culture was positive at this time for hemolytic staphylococcus aureus. Although the urine had been negative on admission, the patient now had a microscopic hematuria.

The diagnosis of acute adrenal insufficiency due to septicemia was made, and the patient was given cortisone, ACTH, and aqueous adrenal cortical extract. Eight hours after having received 100 mg. of cortisone intramuscularly and 100 cc. of aqueous cortical adrenal extract intravenously, his response was nothing less than dramatic. He regained consciousness and for the first time began to talk to family members. Along with these changes the blood pressure stabilized at 112/80 and he began to have diuresis. Cortisone will be discontinued today. The dose has gradually been decreased. In addition to the hormone therapy he has received massive doses of aqueous penicillin and dihydrostreptomycin since admission.

DR. WILSON: This patient certainly demonstrates some unusual and very severe complications, particularly when we realize that this patient not only was in a state of profound shock but also developed septicemia. Dr. DeMere, as the clinician responsible for the burn service this quarter, would you continue the discussion, please?

DR. McCARTHY DeMERE: This case is a very interesting one in that it emphasizes several important points in the treatment of burns generally. The first is that when you have a burn patient you should suspect any type of complication. Actually no two burns will act alike. The second point is that we have demonstrated with this case the importance of close cooperation between clinical treatment and physiological research. This also demonstrates that there is no set formula in the general treatment of burns. There have been many formulas that have been devised and sometime give us a satisfactory rule of thumb, but if these

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are followed routinely, inadequate treatment of the burn is going to result.

This particular case illustrates that cortisone has a very useful application. Recently in the literature there have been some glowing reports of the use of cortisone routinely in burns. Dr. Whitelaw reported several cases in which he gave the cortisone and ACTH routinely with very satisfactory results. However, there have been many physicians who have followed similar lines and have had very poor results. Dr. Herbert Conway has reported recently some very serious complications which, he believes, were directly due to cortisone and ACTH. Therefore, it is our opinion that when this drug is indicated it is quite useful, but as a routine procedure it is dangerous.

DR. WILSON: Thank you, Dr. DeMere. I certainly agree when you say that although cortisone is occasionally very useful in the treatment of patients of this type, it certainly is a mistake to consider that it should be used routinely in the treatment of all burned patients, or as a routine in the treatment of other individuals who have undergone severe injury. Dr. Hardy, I personally believe that all of us are greatly indebted to our physiological research section in the Department of Surgery for studying this patient so intensively. Would you please continue with the discussion?

DR. JAMES D. HARDY: This has been an extremely interesting case to us because it has indeed represented one instance in which cortisone therapy was, in my opinion, lifesaving. It might be of some interest to the group to learn why we were so prompt in deciding that this patient possibly did have adrenal inadequacy. A day or so earlier we had had a patient die from extensive burns and an autopsy had revealed and extensive hemorrhage into both adrenal glands. Therefore, when we saw this young boy with petechial hemorrhages and who exhibited the usual signs of adrenal insufficiency, namely, hypotension, high fever, prostration and low urinary output, we immediately thought of the possibility of adrenal failure. This situation is of course well known, usually being categorized under the general heading of Waterhouse-Friderichsen syndrome. I certainly wish

to agree with Dr. DeMere's comment concerning the fact that cortisone and ACTH probably have a fairly limited and sharply circumscribed usage in the treatment of extensive thermal burns.

DR. WILSON: Dr. Neely, suppose you give us your ideas regarding the severe shock from which this patient suffered.

DR. WILLIAM A. NEELY: The shock that was manifested in this patient certainly occurred too early to be due to the burn alone, especially since the burn involved only 15 per cent of the body surface. Of course, we must consider the possibility that the patient received contaminated plasma or fluid. This certainly could cause the signs and symptoms manifested by this patient. However, we should emphasize the point that burn patients can develop the Waterhouse-Friderichsen syndrome from infection resulting from the burn wound, but it does not usually occur this early.

DR. WILSON: Dr. Frank Wilson, will you discuss the corticoid and 17-ketosteroid studies?

DR. FRANK WILSON: This patient's corticoid and 17-ketosteroid excretion were measured and were of unusual interest. On the day the cortisone therapy was begun, his urinary corticoid excretion was 8.9 mg. for the 24 hours. Although this would be within the normal range for the average person, it has been our experience that persons with burns or other trauma have exhibited a corticoid excretion of up to 24 or 30 mg. per 24 hours. Following the cortisone therapy his excretion approached levels that might be expected had he not had adrenal insufficiency, namely,—from 19 to 22 mg. per 24 hours. Also of interest was his urinary output following the cortisone therapy. During his shock period the patient received some eleven liters of fluid, plasma and blood with little effect on blood pressure or urinary output. He became markedly edematous, this eleven liters representing about 22 pounds of weight. Following the cortisone therapy he began to show diuresis. After three days he was putting out as much as 5 liters of urine a day and on the tenth day of cortisone therapy he put out 8 liters of urine. This was, in all probability, a mobilization of the

large amount of edema fluid accumulated during the period of oliguria.

DR. NEELY: I think it should be pointed out at this point that during the first nine days of the hospital stay of this patient the highest corticoid excretion was 26.6 mg. per 24 hours. In our experience this represents a fairly low level of response. On the tenth and eleventh hospital days the corticoid excretion rose to 55 and 61 mg. per 24 hours respectively. This was the highest excretion of corticoids per 24 hours for any burn patient whom we have studied. In other words, it seems that his adrenal glands were slowly gathering momentum, and on the tenth and eleventh days were finally able to respond to the injury in a robust manner.

DR. WILSON: We have had dramatically demonstrated how the general treatment has saved this individual's life. We must not forget, however, that the reparative surgery to be carried out in the future is still very important. Dr. DeMere, when do you believe this patient will be ready for grafting?

DR. DeMERE: This particular patient will probably be ready for grafting within the next two or three days. I think, perhaps, because he has had a course of cortisone therapy, it would be advisable to start this again the day prior to operation. In the treatment of a burn it is to be remembered that no matter how much

good general treatment is given, our primary problem is in converting an open wound into a closed wound. The skin itself is an organ and, while this is damaged, the patient cannot possibly attain a general balance until it is replaced. In talking of burns generally, it is our aim to cover the burned areas as soon as possible. This is changing with the times and at the present time in some burns, particularly about the hands, we are grafting at the end of seven days, and possibly we will begin doing the same thing with extensive burns of the rest of the body, depending on the availability of the donor areas.

DR. WILSON: Thank you, Dr. DeMere. Certainly the earliest possible covering of the burned area with skin from the patient himself is the objective all of us are striving for. Dr. Duncan mentioned in the beginning that because this patient had a circumferential burn he was treated by the closed method. I would like to emphasize for our visitors that we believe many patients may be successfully treated by the open method just as many may be successfully treated by the closed method. The important thing to remember is that neither method should be allowed to become a method of neglect. Both methods may offer the patient an excellent result provided they are properly applied and the patient is given the attention which he deserves.

CLINICOPATHOLOGIC CONFERENCE

Methodist Hospital,* Memphis, Tenn.

A 41-year-old white female was admitted to Methodist Hospital complaining of nausea and vomiting, shortness of breath, mental confusion and low output of urine. She apparently had been in good health and was known to have been quite rational until 2 days before admission. By the time she was admitted her mental status had progressed to frank confusion, with mumbling and jabbering and she had no contact with reality. There was evidence that the patient had been drinking beyond the usual social limits in the preceding months, but it was believed that she was not addicted to alcohol.

On admission the temperature was 99; pulse 76 and respirations 32; blood pressure 110/70. The neck was supple, the pupils round and small. The optic disc margins were fairly sharp and there was some suggestion of fullness of the discs. No focal neurological signs were found. All reflexes were present and equal. The heart and lungs were normal. Slight tenderness in the upper abdomen "over the colon" was elicited. The patient apparently bruised easily, having two large bruises on her back, several smaller ones on her legs and one about the left eye.

Laboratory data on admission were as follows: hemoglobin 14 Gm.; morphology of the red blood cells was within normal limits; albuminuria was 3+ and the sediment was loaded with white blood cells, bacteria 4+, specific gravity 1.020; blood Kahn and Kline tests were negative. Lumbar puncture findings were reported as negative. Additional later data were as follows: NPN 112.5 mg. %, rising to 162 and finally to 225 mg. %; bromides 83 mg. % (normal value 0.7 to 1.0 micrograms %; not detectable by ordinary methods). The source of the bromides was not determined. Van den Bergh: direct 2.5 mg. and indirect 8.0 mg.; platelets 145,000, Ivy bleeding time 4 minutes. Urea nitrogen was 40 mg. %; cephalin flocculation test 3+ in 24 hours and 4+ in 48 hours; chlorides were 480 mg. per cent. The urine was later loaded with red blood cells and white blood cells.

The patient's course was a gradually deteriorating one excepting brief periods of temporary improvement. Edema, jaundice, frank petechial and ecchymotic hemorrhages of the skin, conjunctivae and gums occurred. There was almost complete anuria and progressive stupor. Cystoscopy and retrograde pyelography revealed no abnormalities. Additional information obtained 2 days after admission was that the patient cleaned some clothes one afternoon (the day of the onset of illness) with carbon tetrachloride in a closed room.

That evening she talked to her fiancée over the phone and stated that she had been deathly sick since cleaning her clothes.

On the eighth hospital day hemorrhage from the mouth and into the skin occurred. The pulse rate increased, blood pressure began to fall and respirations became short and jerky. The patient expired quietly 10 days after admission.

DR. RICHARD E. CHING: I would like to invite all of you to join in the discussion. The diagnosis is very evident as I see it. Has anyone in the audience had any clinical experience with carbon tetrachloride poisoning?

DR. JAMES M. BETHEA: I have seen one or two instances. I think this case is certainly consistent with carbon tetrachloride poisoning because we know it can result from inhalation of the chemical and cleaning clothes is one of the frequently reported ways in which this is brought about. Occasionally poisoning occurs from drinking the chemical. However, I think the majority of the reported cases have been from inhaling the fumes, either in the process of cleaning clothes or machinery.

The toxic manifestations are usually of very rapid in its onset. The symptoms may come on within a few hours after exposure. The symptoms, which this woman described, are like those of one of the first persons I saw who had it. However, that patient fortunately recovered. It took 3 or 4 weeks for his blood chemistry to return to normal. Apparently it is a reversible process if not too far advanced when the diagnosis is made.

Carbon tetrachloride may involve various tissues, particularly the liver and it has been pointed out that people who use alcohol are especially susceptible. This woman did have a history of alcoholism, at least of a mild degree. I suppose that is due to the fact that fatty degeneration of the liver frequently occurs in alcoholism and it makes a person more susceptible to the toxin. The kidneys are probably the next most frequently affected organs. The bone marrow may also be severely damaged. Apparently it affects all cells of the bone marrow, as well as the platelets. In this particular individual it appears that the bone marrow was not as badly damaged as were the liver

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and kidneys. I recall one individual who was a large, obese man who had been a chronic alcoholic. While reaching for what he thought was his liquor bottle he picked up a bottle of cleaning fluid and drank several ounces of it. Within a few hours he was acutely ill and he died within a 24 hour period. One of the dramatic things I remember about the autopsy is that the blood in the heart was still unclotted. They put it in a glass container and one-half to one-third of it was pure fat. The drug apparently had dissolved fat out of the tissues of the body and it was in the blood stream.

Without the history, in the present case, there is probably very little that would make one suspect carbon tetrachloride as an etiological agent. This is not a typical picture of a primary kidney disease like acute nephritis, although the presence of white blood cells and albumin in the urine might make one suspect some type of toxic degeneration of the kidneys. I believe the kidney tubules are primarily affected, and anuria is one of the outstanding symptoms, a symptom that comes very early.

DR. CHING: Thank you, Dr. Bethea. Who else would like to join the discussion?

DR. J. WARREN KYLE: When I was a resident at the John Gaston Hospital, we had a man who came in with acute liver failure and acute anuria and he was an alcoholic. After investigating the case, we found that he had been drinking liniment and on calling the drug store we found that the liniment contained carbon-tetrachloride. This man had a typical clinical picture of the lower nephron syndrome, also the picture of liver failure with jaundice. He proved to be a very durable man, however, in spite of his worthlessness and he survived after being sick for several days, leaving the hospital under his own power. Dr. John Hughes and Dr. Phil Bleeker tell a story about a soldier who inhaled the fumes from a leaking fire extinguisher in the closed cab of a truck in Africa and developed carbon tetrachloride poisoning. He was admitted to a hospital with a diagnosis of infectious hepatitis until the story was unraveled about his having inhaled the poison.

It happens that a recent issue of "What's New" has an excellent summary of carbon

tetrachloride poisoning, including some of the recent articles on the subject. It's really a very informative summary, I think. It brings out the fact that alcoholism seems to predispose to, or make a person more susceptible to carbon tetrachloride poisoning, and that most individuals gave a history of drinking, either chronically or acutely before the disease begins. Apparently other individuals may be exposed to the same amount of fumes and not become intoxicated. It also points out that relatively small amounts and short periods of exposure may be necessary to intoxicate susceptible individuals. The pathology is primarily lower nephron nephrosis and acute necrosis or acute yellow atrophy of the liver. The therapy, of course, is very difficult, but I think it should be primarily concerned with the lower nephron syndrome. One point that ought to be brought out is not to force fluids but to keep the fluids at a minimum of 800 to 1000 cc. per day, plus what is lost in the feces or vomitus. As the urinary output comes up, the fluid intake may be increased. It is very important not to force fluids because of the danger of pulmonary edema. In addition to that, of course, glucose and as much nutritives as possible should be given in an attempt to tide the liver over.

DR. CHING: Who'd like to be the next one to join the discussion? Dr. Tyrer, did you see the patient?

DR. TYRER: Yes, I did, Dr. Ching. I first saw this lady three days after the onset of the illness and at that time, after getting a rather meager history and checking her over, I was impressed with one thing,—that she was apparently in an acute toxic state from some exogenous poison. Dr. Bourland, who had seen her from the onset, held the same opinion. I think it was a couple of days later when the history of cleaning clothes came into the picture, and on the assumption that carbon tetrachloride might be playing a part, we sent her brother out to the apartment and he returned with almost a full gallon of the fluid. The case was exceedingly instructive to me, from the standpoint of apparently how little she actually inhaled. Apparently the room was closed and, as best we could learn, she had placed

a portion of the fluid in an open pan and had rinsed a dress briefly in it. Dr. Kyle brought in the question of fluid intake. One day she received 1000 cc. of 10 percent glucose in water and had an episode of pulmonary edema. The hemorrhagic diathesis was a definite part of the picture. She developed a good many subcutaneous ecchymoses and had terminal bleeding from the mucous membranes. The diagnosis, seem to be clearly established on the basis of the evidence that was brought in from her apartment.

DR. BETHEA: Was there any evidence that the patient was taking bromides?

DR. CHING: Not in the protocol, Jim.

DR. BETHEA: Bromides, of course, are commonly taken by people who drink excessively. It is possible that she had been taking a little bromide all along and after she began to feel badly, she may have taken even more. In the presence of the already damaged liver and kidneys it may account for the high level which was obtained.

DR. CHING: Dr. Tribby will give us the findings.

DR. WILLIAM W. TRIBBY: We think, from the changes found at autopsy, the patient's death was due to carbon tetrachloride poisoning. This first picture (Figure 1)

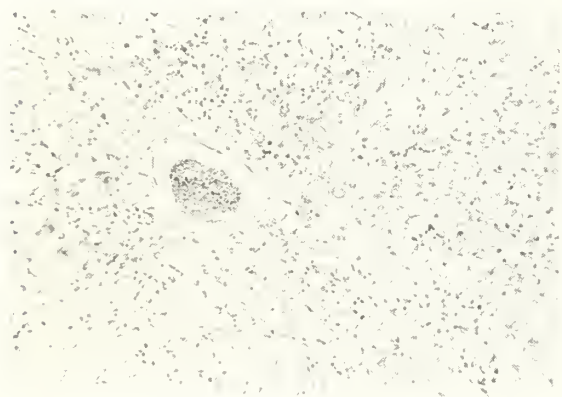


FIG. 1. Marked fatty change and acute necrosis of the liver in poisoning due to inhalation of carbon tetrachloride.

shows the necrosis that has taken place in the liver. There are two things I would like you to see in this picture. One of them is the presence of what appears to be a great deal of fatty tissue or fatty change

in the liver cells. The other thing is that many of these liver cells have become completely necrotic and are represented by bits of acidophilic material. Another interesting thing is that there is practically no cellular infiltration in the liver, certainly not in the centers of the lobules. The fact that the fatty change is present in the peripheral zones, I believe, would indicate that perhaps the fatty change preceded the poisoning and therefore was possibly instrumental in the fatal outcome.

The next one shows the kidney (Figure 2). It is a severe degree of hemoglobinuric

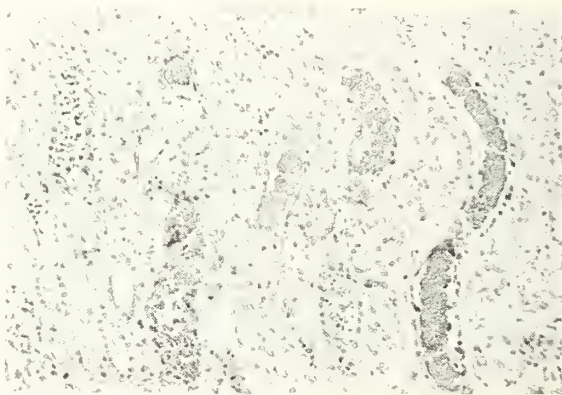


FIG. 2. Hemoglobinuric nephrosis associated with inhalation of carbon tetrachloride.

nephrosis. This is a better term to use because the condition is not confined to the lower portion of the nephron since sometimes the hemoglobinuric casts, which show very beautifully in this photograph, occur in the proximal parts of the tubules.

The patient did not have one of the things that often occurs in this condition, namely pulmonary edema. The lungs were of normal weight. In addition to the hemoglobinuric nephrosis and acute central necrosis of the liver, which we felt was due to carbon tetrachloride inhalation, there were petechial hemorrhages of the myocardium, of the oral mucous membranes, of the conjunctivae on both sides and some passive congestion of the lungs, spleen and the liver. She had jaundice and what we thought was a generalized toxic rash. The liver weighed 1500 Gm., which is about normal, and the kidneys weighed 200 Gm. each, about normal too.

The President's Page

THE NEW YEAR



DR. PATTERSON

By the time this issue of the JOURNAL reaches our members, the new year will be well on its way. The bowl games will have been won and lost, the shouts of victory will have been silenced, and the respective quarterback clubs

will have closed shop for the season. The new year resolutions will have been resolved; some will have been amended to suit changing conditions, some tabled till the next year and still others pigeonholed. A few will be kept and the rest forgotten. By this time, with all these things behind us, we shall all be looking forward.

The income tax problem will loom large on the horizon and demand our first attention. Figures and calculations, reductions and separate sheets to explain them, and a thousand and one such matters will demand much of our spare time. Such questions as "Where did it all go?" and "Why isn't there enough left to pay the first installment?" will perplex us no end. A belated resolution will then be made to see that this or that doesn't happen again, and that we shall do better next year.

Once safely over this hump, we then can level off and see where we are. I think "at" should be added here. Individually we shall be at the same old stands, busy as ever, still concerned with the most important problem of all, namely, practicing good medicine and serving our people in the best traditions of our profession. Collectively, we shall turn our attentions to activities of our component societies; and let us hope that among the resolutions we have kept there will be a strong one to put more interest into, and therefore derive more benefit from, our society meetings. Let us review the literature and prepare those case reports so that we can present better papers. Let us attend these meetings more regularly, and not only learn more about scientific work, but what may be even more important, let us come to know each other better. Not only that, but

let us also become more conscious of the obligations of our societies to our respective communities, and therefore be the better prepared to assume the leadership in medical matters which our people expect us to do.

Then, let us be reminded that our next state meeting at Nashville will soon be upon us. Let us begin early to prepare for this important function of our state association. Let us see to it that our component societies are active and that the delegates will be in better position to represent us in the House of Delegates. Let us also arrange our work so that we can have a good attendance. The committees are already hard at work to arrange an excellent program, one that we can ill afford to miss.

Congress will be in session, and many enactments will be left over from last year that will concern our profession. It will be well, also, for us to keep ourselves informed through the organization section of our *A. M. A. Journal* about these matters. The proposed expansion of the social security program, the V. A. program and its policy in regard to non-service connected disabilities, the workings of the Manion Commission as it makes its inquiry into federal-state relations with special reference to grants-in-aid to states on a matching basis,—these are some of the important problems it will be well for us to study.

At our state level, there are several things we might well consider carefully. The Hospital Service for the Indigent will go into effect in July, and we must be prepared to do our part to see that this will succeed in its purpose. Public Service Committees should be set up in more of our component societies. Our Postgraduate Course in Obstetrics is now operating and should be given strong support whether we as individuals do obstetrics or not.

We wish for all a happy prosperous year, for our state association continued success and expansion in its many activities, and for our component societies more meetings and better programs.

A. M. Patterson.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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JANUARY, 1954

EDITORIAL

CARCINOMA OF THE THYROID

During the past few years there has been an increased awareness of the importance of removing nontoxic nodular goiters because of the increased frequency of carcinoma in this group of individuals. In 1945 Cole and his associates found an incidence of carcinoma in 17.1 per cent of 192 patients with nontoxic nodular goiter. Recently Majarakis, Slaughter and Cole* have continued this study and over a 17 year period (1936 through 1952) have found carcinoma in 0.1 per cent of diffuse toxic goiters, 1 per cent of toxic nodular goiters, and in 15.6 per cent of nontoxic nodular goiters. In the latter group carcinoma was found in 20.9 per cent of goiters having a solitary nodule and in 8.7 per cent of goiters having multiple nodules. They emphasize the importance of performing thyroidectomies in patients with nontoxic nodular goiters and show that the number of operations in their hospital for such nodular goiters in-

creased 40 per cent following the original report in 1945.

In an attempt to determine whether any particular symptom or group of symptoms was more common in the individuals with carcinoma, a comparison was made between a group consisting of 100 consecutive cases of benign nontoxic nodular goiter and 50 consecutive cases of thyroid carcinoma. The only symptom which was statistically important was hoarseness, present in 38 per cent of thyroid carcinomas and in only 21 per cent of benign nontoxic nodular goiters. Other symptoms such as a feeling of pressure, cough or choking were present in approximately the same percentage in the two groups.

In considering other clinical data, the average age of patients with carcinoma of the thyroid was greater than those without carcinoma, and the duration of swelling in the neck was much shorter in the carcinomatous group. Although only 9 per cent of the patients with nontoxic nodular goiters were males, 36 per cent of the patients with carcinoma were males. This emphasizes the point made by Ward several years ago that a nodular nontoxic goiter is more dangerous in men than in women. The consistency of the thyroid gland was of no value in establishing a diagnosis since the mass was soft in consistency in about one-half of the patients operated on for nontoxic nodular goiter and in approximately one-half of the patients operated on for carcinoma of the thyroid.

The most significant finding of all was paralysis of the vocal cord which was not found in any of the patients with nontoxic nodular goiter, but was present in 28.8 per cent of patients with carcinoma of the thyroid. Thus it would seem that if paralysis of the vocal cord is present it presents strong evidence that the lesion is malignant, although the absence of paralysis does not exclude malignancy.

Because there are so few signs and symptoms sufficiently peculiar to either nontoxic nodular goiter or early carcinoma of the thyroid to be of value in making a preoperative diagnosis, it is not surprising that a definite diagnosis was made preoperatively in only 46 per cent of the cases with car-

*Majarakis, J. D., Slaughter, D. P., and Cole, W. H.: Carcinoma of the Thyroid Gland, J. Clin. Endocrinol. 13:1530, 1953.

cinoma of the thyroid. Of this group 60 per cent were inoperable and among these 71 per cent of the patients are now dead. Eight per cent of the patients were diagnosed at operation because of the invasion through the capsule or the discovery of metastases to lymph nodes; of this group 25 per cent are dead. In the remaining 46 per cent of the patients, the diagnosis was made in the surgical pathology laboratory and of this group only 5 per cent of the patients are dead. It is obvious that the authors were not successful in arriving at a diagnosis preoperatively in a very large percentage of cases unless they had evidence of metastases. However, of the metastatic signs, palpable lymph nodes were the least hopeless, particularly since total lobectomy will give a fairly high five-year survival rate in some instances of carcinoma of the thyroid.

Because of the high incidence of carcinoma in solitary nontoxic nodular goiter the authors recommend total thyroid lobectomy of the involved side including the isthmus, assuming that the other side is normal by actual surgical exploration. They recommend bilateral subtotal thyroidectomy in patients with multinodular nontoxic goiter. In the treatment of carcinoma of the thyroid gland they advised total thyroidectomy and radical neck dissection of the involved side.

The five-year survival rate of patients with carcinoma of the thyroid varies with the pathologic type of the tumor. In general the papillary, follicular and alveolar adenocarcinomas present a high rate, whereas the Hürthle cell, giant cell, diffuse and squamous cell carcinomas are associated with an extremely low rate. The authors report a 36.8 per cent five-year survival, although many of their patients still alive after five years continue to have active disease. In those patients whose disease was diagnosed preoperatively the five-year survival rate was 20 per cent, whereas in those patients whose disease was diagnosed after examination of the surgical specimen the five-year survival rate was 80 per cent.

These statistics reported by Majarakis, Slaughter and Cole are important in emphasizing the importance of early surgical therapy of solitary nodular nontoxic goiters. Certainly it would seem advisable to

remove all solitary nodules of the thyroid since the ability to accurately differentiate between benign and malignant lesions is not possible with any degree of accuracy. Finally, in those individuals in whom the diagnosis of carcinoma cannot be made except in the surgical pathology laboratory the five year survival rate is extremely good.

ADDISON SCOVILLE, JR., M.D.



PRACTICE OF MEDICINE IN THE FUTURE

To adopt the role of soothsayer is to expose oneself to the danger of having to admit error. In this instance the editor is going to make predictions so far in the future that the readers will have forgotten this editorial. In the past three issues^{1,2,3} an effort has been made to call attention to trends which have the potentialities of modifying the socio-economic aspects of medical practice in the future.

We have indicated repeatedly that the methods of practice of twenty years, or even more recently, are gone forever. Not only does this apply to the professional aspects of practice but to the economic as well. The reasons for this are trite by now. They became commonplace through the representations of the New Deal in its urge for compulsory health insurance. These reasons have been embraced by the representatives of labor in their demands for better health conditions and "fringe benefits." Through publicity they have become the thoughts of most self-supporting persons and must be faced as facts by the profession to give perspective for a look into the future. These reasons can be reduced to a few words. (1) Science has provided the profession with diagnostic and therapeutic tools which have influenced the health and longevity of the population to a degree unthought of in the wildest speculations of fifteen years ago. (2) The costs of using these tools have made obsolete the house and office call charges of

¹Editorial. Medical Care in the Coal Mining Areas, *J. Tenn. M. A.* 46:384, 1953.

²Editorial. Management's Stake in Medical Care, *ibid.*, 46:432, 1953.

³Editorial. The Future of Voluntary Prepayment Medical Care, *ibid.* 46:478, 1953.

the days when a minimum of laboratory procedures and expensive drugs were used. (3) Hand in hand with technical advances came a greater use of hospitals adding an enormous and commonly the major financial burden of illness.

The socially minded, in and out of politics, used these facts, plus another commonly bruited saying that the benefits of science profit only the wealthy who can afford them and the indigent who receive them in the charitable or university hospitals. These facts made responsive that great mass of our population living on wages, whether white collar or laboring, to the suggestions of either compulsory or voluntary health insurance. They caught on like a prairie fire. As of the present date the latter has won out. Though compulsory health insurance at first attracted the interest of those often on the borderline of medical indigency, the laboring group, its leaders on cooler thought have discarded governmental control as contrary to our way of life. Labor leaders wish to have their say and have profited by the denouement of British nationalization.

What will the next decade bring in the social and economic aspects of medicine? Labor and industry are beating out their relationships in the heat of the bargaining table and in the process are beginning to view the medical field by choice and necessity. They were uninvited allies in the fight against compulsory health insurance. Whether we like it or not they now represent the pressures which will modify the practice of medicine in the next decade.

Voluntary health insurance is here to stay; it will expand and it will change. It seems probable it will change in the direction of the non-profit types under the control of labor. The experience of the pioneering U.M.W.A. will be utilized by other of the labor groups. (The Wall Street Journal recently featured the C.I.O. United Rubber Workers victory in Ohio to force industry to foot the *whole* bill of prepaid insurance, in this instance utilizing both profit and non-profit insurance agencies.) If by chance the C.I.O. and A.F. of L. decide to go into the business of non-profit prepayment health insurance, it will force com-

mercial insurance into more profitable fields of insurance. In the well-to-do rural areas of the middle-west the farm cooperatives can do the same job as the unions. (They are already experimenting in the insurance field.) Presently established non-profit carriers no doubt will continue to underwrite small non-unionized groups, in retail business and the like.

Thus we may prognosticate the pattern of prepayment voluntary health insurance to cover a large proportion of the population. We may predict that it will not only provide hospitalization and surgical benefits but also medical benefits and provide for diagnostic studies in the office. Already U.M.W.A., which paid for 2,325,921 hospital days in the year ending June, 1953, has data which may very well influence future practice in the union insurance plans. In the six month period ending June, 1953, in Tennessee and adjacent states, 32 per cent of 6,598 hospitalized patients could have been adequately handled on an office basis and would have saved 25 per cent of the hospital days utilized in the area.

Not only is industry being pushed by labor into prepayment insurance as "fringe benefits" but on its own it is increasing its demand for better medicine and especially preventive medicine. Management claims that the application of modern medicine is archaic under the solo system. It says that efficient medicine must be practiced in some group arrangement and has organized for the purpose of setting up clinics within which doctors may practice. (Labor already [U.M.W.A.] has embarked on a program of hospital-clinic facilities in areas offering inadequate medical care.) Industry's influence is being recognized by the A.M.A. in the activities of its Council on Industrial Health.

So we may anticipate increasing pressure by labor and industry to provide efficient care, not only in curative, but also in preventive medicine. Efficiency and lower costs of overhead may be provided by medical centers or clinics,—clinics to be financed by labor and or industry.

As seen from the armchair in 1954, the practice of medicine in ten or fifteen years hence will be something of this nature. The

free choice of a doctor by the patient will be continued. The patient will find security against the costs of illness through voluntary health insurance. The physicians' fees will be set in a large proportion of his cases by the insurance plans. (Unlimited fees will be available only from the few. Indigents will be given care at the expense of local government,—as in the Tennessee plan for Hospitalization of the Indigent or in the Maryland Plan where the physician is paid a nominal fee. The great group of veterans will no doubt be cared for under some government plan.) Labor and or industry will provide hospital-clinic buildings where the physician may rent space to conduct his private practice,—diagnostic facilities being provided at a much lower cost and more efficiently by spreading the overhead rather than wasteful attempts to provide these in solo practice. Such facilities will attract young men of good training and there will be much decentralization of medicine away from the urban medical centers. Labor and industry will insist on the use of these medical centers in keeping their people well rather than in curing them. (This attitude is already widely applied as regards the officials in big business.)

And what if we do not like it? Industry is asking the doctors to be the captains of the teams to interpret medical service in terms of *quality* and *quantity*; it itself wishes to assume health organization and hospital management; and it wishes labor to carry out public education. If we won't play, someone else will "quarter-back" the team. In broad thinking the "priest-like" concept of the doctor is gone. Labor sees the medical profession as capable of supplying a service. In the words of one labor leader it "contemplates the purchase of the services of the medical profession and establishes the best possible service at a fair and just cost." Management sees medical service as a merchantable commodity. The profession cannot ignore these trends, if called upon to play in the game, for much education is needed. Neither labor nor management have any concept of the intangibles in medical service. They must not be permitted to think of fees in terms of time spent. (This obtuseness was obvious

in a letter by an industrial official who, in objecting to a medical fee, referred to the "leg-work" done by the house-staff and the little time devoted to the case by the attending physician. This man must be taught that the physician's function is much like that in which he would find himself as a managerial consultant.)

These then are thoughts of 1954 regarding the future of medical practice. Much of this seems inevitable unless total war were to intervene. If such occurred the other side of the coin,—socialized medicine,—would be the inevitable pattern in the exigencies of a national struggle for existence.

R. H. K.

DEATHS

Dr. Benjamin Garfield Baker, Knoxville, died November 26, 1953. Aged 71.

★

Dr. M. D. Shearer, Tellico Plains, died November 21, 1953, following a brief illness. Aged 78.

★

Dr. Jacob A. Danciger, Memphis pediatrician, and chief of the medical division of Le Bonheur Children's Hospital, died November 24, 1953, following a long illness. Aged 39.

★

Dr. J. V. Hodge, Kingsport, died November 30, 1953. Aged 64.

★

Dr. Sam H. Jones, Sr., Sunbright, was fatally burned in a fire which consumed his home on December 14, 1953. Aged 79.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Knoxville Academy of Medicine

The Academy held its regular meeting on December 15 in the auditorium of the Academy Building. The scientific program was a Case Report, by Dr. A. H. Lancaster, and a paper on "Ambulatory Management of Prostatic Infections" by Dr. John Daugherty.

Officers elected at this meeting for 1954 were: Dr. Charles Sienknecht, president-elect; Dr. Oliver Hill, vice-president; Dr. Ralph Monger, re-elected secretary-treasurer. Dr. George Inge assumes the presidency of the Academy this month.

Consolidated Medical Assembly

The Assembly held its regular session on December 1 at the New Southern Hotel. Dr. Swan Burrus read a paper on "Pathology and Surgery of Ovarian Tumors," and Dr. H. T. McIver presented a paper on "Diagnosis and Treatment of Acute Sinusitis." Officers for 1954, elected at this meeting, were: Dr. J. L. Armstrong, president; Dr. Oliver Graves, vice-president; Dr. J. T. Thornton, Jr., second vice-president; Dr. R. M. Conger, third vice-president; Dr. S. M. Herron, re-elected secretary-treasurer; and Dr. Leland Johnston, assistant secretary-treasurer.

Coffee County Medical Society

The newest county medical society in Tennessee, organized December 8, 1953, is off to a good start with every white physician in Coffee County already a member. Following two previous meetings when plans for the formal organization on December 8 were made, the Society adopted its constitution and by-laws and elected its permanent officers as follows: Dr. Horace Farrar, Manchester, president; Dr. James M. King, Tullahoma, vice-president; Dr. Bryant S. Swindoll, Tullahoma, secretary-treasurer. Named to the Society's Board of Censors were Dr. Randolph Cate, Tullahoma; Dr. Howard Farrar, Manchester; and Dr. Claude Snoddy, Tullahoma. Dr. Horace Farrar was also named delegate to the Tennessee State Medical Association.

Smith County Medical Society

Officers for 1954 were elected during the annual meeting of the Society in December. Dr. Gordon Petty, Carthage, was named president; Dr. Edward Green was named vice-president; and Dr. Sam Y. Garrett, secretary-treasurer. Dr. Thayer Wilson was named delegate to the Tennessee State Medical Association.

Memphis and Shelby County Medical Society

The meeting on October 6, 1953, was a dinner honoring its members who had practiced fifty years and members who are presidents of national societies and sections of the A.M.A. Those receiving fifty year certificates and pins were Doctors George Livermore, W. H. Lovejoy, Logan C. McVay, Wallace P. Moore. Presidents of societies or A.M.A. Sections were: Dr. Milton Adams of the American Society of Plastic and Reconstructive Surgery; Dr. Harold Boyd of the American Academy of Orthopedic Surgeons; Dr. Joe Francis of the American Association of Railway Surgeons; Dr. C. D. Hawkes of the Neuro-Surgical Society of America; Dr. Sam Sanders of the Section of Otolaryngology of the American Medical Association.

Nashville Academy of Medicine and Davidson County Medical Society

A dinner meeting was held at Mid-State Baptist Hospital on November 10. Papers were presented by Dr. T. B. Zerfoss, Jr., on "Pre- and Post-Operative Management of Children" and by Dr. R. A. Greer Ricketson on "Radical Treatment for Cancer of the Face and Mouth."



The meeting on December 8 was a dinner meeting at Vanderbilt University Hospital. Dr. A. M. Meirowsky presented a paper on "Paraplegia" and Dr. W. M. Hamilton one on "Unusual Sites of Osteochondritis Dissecans."

MEDICAL NEWS IN TENNESSEE

University of Tennessee College of Medicine

Investigators in the Division of Pediatrics have been awarded research grants totaling \$21,928 by the U. S. Public Health Service. A \$10,000 grant will finance studies in certain aspects of abnormal physiology in sickle cell anemia. A \$11,928 grant will permit a continuation of studies in high blood pres-

sure in acute nephritis of children which have been conducted during the past four years. The investigators also are concerned with the response to various drugs used in the control of high blood pressure and whether these agents have a beneficial or harmful effect on the kidneys.

★

Dr. R. R. Overman, of the Section on Clinical Physiology, has been awarded a renewal of his research grant of \$6,809 by the U. S. Public Health Service to continue his study of the effects of diuretic and anti-diuretic agents on cellular permeability.

★

Three research grants totaling \$47,107 have been awarded the Division of Pathology and Bacteriology.

Two, a total of \$34,907, are renewals of old grants in the search for a blood test for cancer, under the supervision of Doctors William Hale, Frederic Chang and Douglas H. Sprunt. The third grant of \$12,200 is to finance a long range investigation already underway for 10 years, studying the effect of nutrition on the ability of patients to resist infections.

PERSONAL NEWS

Dr. C. D. Walton, Mount Pleasant, is the new chief of staff of the recently dedicated Maury County Hospital. Dr. Walton served as chairman of the building committee for the \$2,200,000.00 structure.

Dr. H. B. Nevans, Livingston, is the new president of the Upper Cumberland Shrine Club.

Dr. Roy J. Jarvis, formerly of Sneedville, is now associated with Dr. R. A. Broady in Sevierville.

Dr. Jack Clark, Clay County native, is now practicing medicine in Cookeville.

Dr. Henry B. Gotten, Memphis, addressed the Memphis Rotary Club last month on "Life After Forty."

Dr. Harwell Wilson, Memphis, is the new president of Baptist Hospital medical staff.

Dr. Edward C. Segerson, Memphis, is the new president of the staff of St. Joseph's Hospital.

Dr. S. H. Long, Chattanooga, announced last month that his son, **Dr. Ira M. Long** is to be associated with him in the practice of ophthalmology.

Dr. S. J. Schaeffer, Jr., has located in Dresden

where he is associated with **Dr. P. W. Wilson's** Clinic

Dr. Jewell M. Dorris, Memphis, is the new president of the Memphis Surgical Society.

Dr. John C. Burch, Nashville, has been elected president of the Southern Surgical Association. Dr. Burch had been secretary of the Association for several years.

Dr. Clifton W. Woolley has been elected president of the Memphis Pediatrics Society.

Dr. George Inge, Knoxville, has resumed practice following a prolonged illness.

Dr. Ralph H. Monger, Knoxville, is the new medical and scientific director of the Tennessee Division of the American Cancer Society, succeeding Dr. R. L. Sanders, Memphis.

WOMAN'S AUXILIARY

Fall Board Meeting Discloses Much Progress, Steps Up Pace of Activities

The Board of Directors met in Nashville September 30, 1953 at the Richland Golf Club.

The President, Mrs. H. D. Hickey of Chattanooga, greeted her officers and chairmen, reminding them that 'Together We Progress'. She stated our goal, a 10% increase in membership, and our working slogan, 'Every Eligible Doctor's Wife a Member'.

Mrs. Vernon Hutton, Jr., of Nashville, chairman of legislation, had resigned due to illness in her family, and the Directors elected Mrs. Charles C. Trabue, IV, of Nashville, as new legislative Chairman.

State Treasurer, Mrs. J. M. Higginbotham, read her report.

A roll call recorded 31 members present: Mrs. H. David Hickey, Mrs. W. W. Hubbard, Mrs. Elmer T. Pearson, Mrs. Robert McCracken, Mrs. Roy A. Douglass, Mrs. Samuel Blackwell, Mrs. Horton G. DuBard, Mrs. R. N. Foote, Mrs. Chas. C. Trabue, IV, Mrs. C. B. Roberts, Mrs. W. W. Potter, Mrs. George Burkle, Mrs. Lynch Bennett, Mrs. Joseph D. Anderson, Mrs. Carrol C. Turner, Mrs. W. R. Buttram, Sr., Mrs. B. M. Overholt, Mrs. Ben L. Pentecost, Jr., Mrs. Harry Miller, Mrs. Frank A. Moore, Mrs. Erle E. Wilkinson, Mrs. O. E. Ballou, Mrs. S. J. Sullivan, Mrs. Wm. A. Garrott,

Mrs. Paul Morrissey, Jr., Mrs. Harry J. Jacobson, Mrs. J. Culpepper Brooks, Jr., Mrs. J. M. Higginbotham, Mrs. O. W. Carter, Mrs. A. M. Patterson, Mrs. Thurman Shipley.

The President thanked Mrs. Robert McCracken, and all those who so ably assisted her, for arrangements and all efforts on their behalf to help make an enjoyable and successful gathering.

Mrs. J. Culpepper Brooks, Jr., corresponding secretary, distributed the new stationery.

Mrs. O. W. Carter, historian, asked that materials for the scrapbook to be sent to her during the year.

Mrs. George Burkle, Director, requested close cooperation this year. Mrs. Elmer T. Pearson, regional vice-president, reported that permission for organization of auxiliaries in their respective counties had been given by the Medical Societies of Sullivan, Johnson and Hamblen counties. Mrs. Roy A. Douglass, regional vice-president, reported the potential of a new four-county auxiliary in west Tennessee.

Mrs. Joseph D. Anderson, Archives Chairman asked that all literature and materials be sent to her all during the year and not wait until the end of the year.

Mrs. Carrol C. Turner, public relations chairman, gave an excellent and most comprehensive report on past and future planned workings of Rural Health Councils on national, state, and local levels. Mrs. Turner's reports and plans were fully explained and accompanied by use of literature, pamphlets, and a set of large posters. Mrs. Turner stated that full outlines and materials will be mailed to all. She moved that the Rural Health Council program be accepted as a public relations project. The motion was seconded and carried.

Mrs. S. J. Sullivan, health project chairman, read her report on the project work already done, and presented mimeographed rules and suggestions for the new Health Project Contest to be sponsored by the Auxiliary this year.

Mrs. Erle E. Wilkinson, nurse recruitment chairman, asked that we approach 1st year High School students and form 'Future Nurses Clubs'. She urged that we

take advantage of television and radio time programs on this subject, which are now available. Also leaflets entitled, 'Nursing Careers,' may be obtained through local postmasters.

The President called attention to the promptness of Mrs. M. W. Holehan, revisions chairman, in getting the Constitution and By-Laws printed and ready for distribution at this meeting. The AMA Handbook was also distributed.

As Mrs. W. Lewis McGuffin, AMEF Fund chairman, was absent, her co-chairman, Mrs. Samuel Blackwell, discussed the working of this fund and the urgency of a greater effort upon our part to raise a larger amount toward this fund this year.

Mrs. R. N. Foote, press and publicity chairman, reported that space has been set aside for Auxiliary news in the State Journal; also that TSMA has given \$300.00 to the State Auxiliary toward the publishing of four Newsletters this year. Copies of the first Newsletter were presented to the Board by Mrs. Foote. Each member of the Board will be mailed ensuing copies during the year.

Mrs. J. Culpepper Brooks, Jr., corresponding secretary, responded to various requests for lists of names and addresses of committee chairmen by saying that if each local president will send her complete list of chairmen to the corresponding secretary, then in turn she will send such information to any committeeman upon request.

By request of the president the resolution—1931,—promotion of "Today's Health" (Hygeia)—a responsibility; resolution of the House of Delegates to the AMA was read by the secretary.

Mrs. Horton G. DuBard, 'Today's Health' chairman, asked for complete lists of chairmen so that she may get materials from headquarters to them as soon as possible.

Mrs. C. B. Roberts, finance chairman, distributed to all members present, copies of the 1953-'54 Budget, prepared by Mrs. B. M. Overholt, immediate past finance chairman.

Mrs. Thurman Shipley, 'Bulletin' chairman, asked that we take the Bulletin to gain the necessary information for suc-

cessful progress in the work of the Auxiliary.

Mrs. O. E. Ballou, program chairman, reported her work was near completion. She has sent two copies of program materials to each local president. Mrs. Ballou urged us to work closely with the PTA; asked us to stress the social side to bring doctors' families closer together; also to adopt the theme, 'Know Your Community'.

The President called on Mrs. A. M. Patterson to read a resolution concerning civil defense. Mrs. Patterson read the resolution, moved its adoption. The motion carried.

The President called on Mrs. W. W. Potter, Director, for a report of the June 1953 Convention of the Woman's Auxiliary to the American Medical Association. Mrs. Potter gave an excellent report; a complete and most worthwhile account of the entire convention which was greatly appreciated and enjoyed by the entire assembly.

On Wednesday evening, September 30th, the Directors were dinner guests at the home of Dr. and Mrs. Lynch Bennett, where they were most graciously received and served a delicious dinner. Mrs. Hickey introduced Dr. and Mrs. Robert Finks of Nashville to the assembly.

Dr. Finks, a member of the TSMA Advisory Council to the Woman's Auxiliary, commended the Auxiliary for doing outstanding work in fields which are essential to the good and welfare of the general public. Dr. Finks expressed appreciation in behalf of the TSMA and encouraged a vigorous promotion of such good work during the coming year.

Mrs. W. W. Hubbard, organization chairman, gave a most interesting and detailed procedure for organizing new auxiliaries and for regaining and maintaining memberships. A general discussion followed.

By general consent it was decided that the business of calling a meeting during the winter be left to the discretion of the president, in accordance with her suggestion.

Mrs. Lynch Bennett will serve as chairman of the Annual State Convention, April 18-21, 1954, in Nashville.

President's Message

Dear Auxiliary Members:

I wish it had been possible for you to attend the Conference of State Presidents and Presidents-Elect and National Chairmen in Chicago, November 18-20, with Mrs. W. W. Hubbard, your President-Elect, and myself. The entire time was filled with panels, discussion groups, talks and movies to better inform us of Medical Auxiliary work and its progress.

It was my privilege to represent Tennessee on the American Medical Education Foundation Panel. This is a project in which I am deeply interested and I urge you to acquaint yourselves with the importance of this work. Last year we were given credit for less than \$300 in contributions. This is indeed a small amount in comparison to our potential, and the fact that we have three of the seventy-nine medical schools in the Nation.

Other discussion panels included: Civil Defense; Legislation; Nurse Recruitment; Mental Health; Today's Health; Rural Health; and Organization. These were presented with relation to the program material and public relations material.

Complete reports of this meeting will be published in the December issue of the Bulletin. May I ask each of you to read them remembering: "A man's judgment is no better than his information." Inform yourselves of Medical Auxiliary work and its accomplishments.

To me, the highlight of this entire meeting was the luncheon speech of Dr. Edward J. McCormick, President of the AMA, on "Auxiliary Activities in the Preservation of Democracy". This will also appear in the Bulletin. Please read it and urge your husband to read it also.

Have you had a program on Legislation lately? Do you know what the Bricker Amendment is and why AMA is in favor of it? Do you know what AMA proposes for Veteran Medical Care? Have you heard of phase two in the extension of Social Security, the Jenkins Keogh bill? Also, remember the threat of socialized medicine is still with us in many new disguises.

We must ever keep in mind we are an

auxiliary to a medical society, not a federated woman's club, with the privilege of being a member because we are wives of doctors. Our purpose, first and foremost, is to assist our husbands, the local Medical Society, the State Medical Association and the AMA in programs for the advancement of medicine and public health.

Get busy on your projects; really sell Today's Health; start a Future Nurses Club in your local high school or the ninth grade of Junior High; affiliate with the local Civil Defense; back our Health Project in the High Schools, urging classes to participate; subscribe to the Bulletin; work enthusiastically on the Public Relations program planned for this year; contribute to AMEF. Be an informed member.

Mrs. Schaefer, National Auxiliary President, has selected as the theme this year: "Together We Progress" and the goal: 10% increase in everything. May I quote "He who would leave foot-prints in the sands of time must wear work shoes". I do hope each of you have on your work shoes and the Tennessee Auxiliary will surely leave indelible foot-prints in Auxiliary work this year.

Sincerely,

(Mrs. H. D.) Marguerite Hickey,
President

The Auxiliaries

KNOXVILLE—

A resume of activities of the Auxiliary recent months shows:

to the Knoxville Academy of Medicine for

A tea for prospective student nurses attracted 50 juniors and seniors from 11 schools. Dr. Phil Thomas spoke, a movie, "Keeper of the Lamp," was shown, and nursing directors detailed duties in their hospitals. Then a tour of hospitals climaxed the meeting.

The Auxiliary celebrated its silver anniversary this year, with more than 100 members attending.

Twenty-five sets of books were given to Knox County High Schools, containing "The Key to Peace," Clarence Manion, "Revitalizing a Nation," Douglas MacArthur, and 'Repulsory Medical Care and The Welfare State, Melchoir Palyi.

The Auxiliary assisted with the November Diabetic Detection Drive in all hospitals and several industrial plants.

CLEVELAND—

In November, the Auxiliary to the Bradley County Medical Society heard Mrs. Augustus McCravey, wife of a Chattanooga physician, relate the story of the Orange Grove School for Retarded Children. Dr. and Mrs. McCravey were largely responsible for establishing the school. Twelve members and two guests attended the interesting meeting.

Mrs. William A. Garrott, President, announced award of the Auxiliary's three-year nurse-education scholarship to Martha Tom Ramsey, senior class salutatorian, Vice President of Future Homemakers of America, Glee Clubber and President of the Senior Class FHA. Miss Ramsey planned to enter Fort Sanders Nursing School in Knoxville.

Mrs. H. D. Hickey, State Auxiliary President, addressed the Local Auxiliary on the subject of the statewide program of activities.

JOHNSON CITY—

The Tri-County (Washington, Carter, Unicoi) Auxiliary is concentrating on assistance to nursing students, paying tuition for one student each year. The Auxiliary also gave \$150 this year to the nurses' library in Johnson City.

WEST TENNESSEE—

The Auxiliary to the West Tennessee Consolidated Medical Assembly enjoyed two recent monthly programs. At one, Mrs. Victor Snyder, Jackson attorney, spoke on the Proposed (later adopted) Amendments to The Tennessee State Constitution. At the second, the members heard Mrs. Roy A. Douglass, former Auxiliary president, tell of her recent trip to Mexico.

CHATTANOOGA—

The accent is on activity in the Auxiliary to the Chattanooga-Hamilton County Medical Society. Here are the highlights:

Hosted out-of-city wives at the Tennes-

see Valley Medical Society at a unique style show featuring fashions of *years* ago at a Fairyland Club luncheon, then banqueted the visitors that evening; gave them a coffee next morning and topped off with a sight-seeing trip.

Conducted the annual benefit bridge from which funds are used for worthy purposes in the medical care field. For example, the Auxiliary made a partial loan on a nurse scholarship; donated to the Mary Ann Brown Cerebral Palsy School; bought a gas range and kitchen utensils for the Erlanger Hospital Nurses' Home; gave an incubator to Memorial Hospital; bought washable toys for T. C. Thompson Children's Hospital; made another scholarship loan; gave three wheel chairs to the Silverdale Hospital; contributed to the Orange Grove School and to the Guidance Clinic; made a second donation to the Cerebral Palsy School, and donated to the Erlanger Nurses' Athletic Fund.

MEMPHIS

Husbands of the Auxiliary to the Memphis and Shelby County Medical Society were toasted with an annual barbecue at the home of Dr. and Mrs. W. H. Gragg.

At another meeting, Mrs. Arnold Klyce of Les Passees, told of the work of that group with the cerebral palsy clinic.

Mrs. Horton DuBard reported on the Fall Board meeting of the State Auxiliary. Mrs. Ben L. Pentecost, President, directed a business session.

Programs for the Auxiliary year will follow the national theme: "Know Your Community."

BOOK REVIEW

The Epidemiology of Health. New York Academy of Medicine Publication, edited by Iago Galdston, M.D. New York: Health Education Council. 1953.

This little book based on the Eleventh Annual Eastern States Health Education Conference is a collection of essays by physicians highly qualified in medical and health education. The essays begin with

an explanation of the meaning of the epidemiology of health. The historical evolution of the concept of epidemiology of health, which is not new, is traced from before Hippocrates to the present and then this concept is considered in relation to the army, industry, tuberculosis, mental hygiene, nutrition and old age. The remaining essays are difficult to summarize, because they cover broad subjects, but in one, a plea is made for more concern with broader perspectives in the practice and teaching of medicine. In another it is agreed that the positive side of health must be developed, the mere evidence or prevention of disease is not enough, life must be made fuller, richer, happier. The final essayist discusses behaviour—centered health education in which it is desired through the application of the social sciences to study the basic drives and motivations of human beings so that health education may be more accurately focused.

These essays written by men of broad and varied experience in teaching and practice reflect their personal philosophies. They are not recommended for those satisfied with the status quo of medical practice and teaching, but for the progressive student or practitioner, they should furnish pleasant and thought-provoking reading.

ROBERT QUINN, M.D.



Living with a Disability. By Howard A. Rusk, M.D., and Eugene J. Taylor. Garden City, N. Y.: Blakiston Co., 1953. Price 3:50.

The authors, in collaboration with other staff members of the New York University-Bellevue Medical Center, have written an eminently useful handbook. Beginning with a commentary on this "century of the gadget" they indicate the applicability of these "gadgets" in the care of the handicapped patient. One is impressed by the measure of independence which can be afforded some of these patients by the use of such devices.

Special chapters are devoted to appliances which will help the partially disabled to eat, dress, work, and play without undue dependence upon others. Home construc-

tion methods and simple alterations of interiors are suggested which will increase the comfort and independence of the patient in moving about his home. Any physician who sees patients confined to a chair will be interested in the information about the more modern types of wheel chairs and accessories. Toward the end of the book there is a section labeled "Picture Credits" which indicates where these ingenious devices may be secured. Instructions are given for making some of the less complicated apparatus.

The format is attractive, and the illustrations are numerous. This is a compact, well written volume and is highly recommended to all practicing physicians. It should serve as an excellent manual for handicapped patients and their families.

BERTRAM E. SPROFKIN, M.D.



Endocrine Treatment in General Practice.

Edited by Max A. Goldzieher, M.D., and Joseph W. Goldzieher. New York: Springer Publishing Co., Inc., 1953. 474 pages. Price \$8.00.

This is a volume of thirty sections or chapters contributed by twenty-one physicians known as teachers and some of them as endocrinologists.

The endocrinological aspects of disease are featured in this book. Space is allotted to disorders of childhood, growth and sexual development, and to senescence. A series of sections take up the metabolic and nutritional disorders,—energy metabolism, obesity, carbohydrates, fat, protein, water and electrolyte, and calcium metabolism.

The organ systems are considered from the standpoint of the endocrine glands, either as factors in the causation of disease or as hormones of these glands influencing the course of such diseases. As is to be anticipated in light of present day knowledge, half of the book is given to the diseases related to the gonads and sexual function. More is known and more experience has developed in this sphere of endocrinology than in the others.

The book is written in a simple style permitting easy reading. It has simplified much of the technical knowledge of endo-

crinology. Much of the discussion is sound as related both to pathogenesis and treatment of the endocrinological diseases. Nevertheless some items under the discussions of therapy have either not been evaluated as yet or have not been substantiated by sufficient evidence. The reviewer feels that some of the therapeutic recommendations will not stand the test of time. There is a most valuable appendix listing the hormone preparations currently available.

R. H. K.



PLACEMENT SERVICE

The placement service of The Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 322 Doctors Building, Nashville 3, Tennessee.



Locations Wanted

Two young physicians, Priority IV, 1952 U. T. graduates, desire to locate in East or Middle Tennessee as partners in General Practice. Available October, 1953. LW-30



A 32 year old, married physician, Jewish Faith, priority 4, degree from Wisconsin, 1944, board certified in surgery, desires an assistant or associate relationship. Available immediately. LW-35



A 26 year old, married, physician, M.D. Tennessee, 1949, draft exempt, desires associate relationship for general practice and general surgery. LW-46



A 31 year old, married physician, Catholic, priority 4, degree from University of Tennessee, 1949, desires an associate relationship for general surgery. Available February 20, 1954. LW-47



A 28 year old, married physician, Roman Catholic, priority 4, University of Tennessee graduate, 1948, specialty internal medicine, desires clinic, assistant relationship for internal medicine. Available January, 1954. LW-48



A 28 year old, married physician, Protestant, graduate, Bowman Gray School of Medicine, 1946. Now completing two years of service in Air Force, in which all time was spent in obstetrics-gynecology specialty. Available January, 1954. LW-49



A 54 year old, married physician, Protestant,

graduate University of Minnesota, board certificate in Radiology, desires smaller to medium sized community. Available immediately. LW-50

★

A 34 year old, married physician, Protestant, graduate University of Cincinnati, 1943, priority 4, desires clinic, preferred community 10,000 up, General Practice. Available March 1, 1954.

LW-51

★

A 33 year old, married physician, Protestant, University of Tennessee graduate, priority 4, general practice, preferred community 5,000 to 25,000 with well equipped community hospital. Will consider group practice and industrial practice. Available March 1st.

PW-52

★

A 30 year old, married physician, Protestant, graduate Duke University, priority 4, desires general surgery in small or large city. Available July 1st.

LW-53

★

A 34 year old, married physician, Protestant, graduate Medical College of Virginia, priority 4, general practice, desires small to moderate community. Available July 1st.

LW-54

★

A 28 year old, married physician, Protestant, graduate Emory University, at present in military service. Desires small community, would consider industrial work. Available July 1st.

LW-55

★

A 37 year old, married physician, Episcopal faith, graduate Temple University Medical School, will be released from U. S. Navy June 15th. Desires location in Knoxville, internal medicine, partnership or part or full time teaching position.

LW-56

★

A 28 year old, married physician, Episcopalian, graduate University of Tennessee, priority 4, desires general practice of 5,000-10,000 community. Available July 1st.

LW-57

★

A 34 year old, married physician, Protestant, graduate Northwestern University, priority 4, desires general surgery in community of 50,000-250,000 population. Availability depending on time and place opportunity presents itself.

LW-58

★

A 27 year old, single physician, Episcopalian, graduate Baptist Memorial Hospital, Memphis, Military Status—5-A. Desires general practice in community of 10,000 to 25,000. Available April 1st.

LW-59

Physician Wanted

Upper Cumberland County, 13,000 population with modern 30-bed hospital, needs additional physician to do General Surgery and Obstetrics.

PW-26

★

South Central Tennessee town, 1,100 population, farming and dairy center. Only doctor recently deceased. Home and office equipment available.

PW-27

★

Large West Tennessee Hospital needs replacement for Director of the Department of Radiology.

PW-32

★

Urologist in large East Tennessee city desires person to take over his office and practice. Office located in large physicians' building and is the only Urological practice in the center.

PW-33

★

Full-time Negro physician needed for full-time teacher of Pediatrics in Medical School.

PW-34

North central town, 650 population with 5,000 people in trade area desires general practitioner. Area formerly served by two physicians now deceased. Good agricultural area.

PW-38

★

Partially disabled Memphis physician with large general practice and modern facilities desired as associate, various financial arrangements possible.

PW-40

★

General Practitioner—Interested in participating in the General Practice teaching program at the University of Tennessee on either a half-time or full-time basis. The University of Tennessee College of Medicine, General Practice Program, 874 Union Avenue, Memphis 3, Tennessee.

PW-41

★

Draft exempt experimental pathologist needed at Oak Ridge National Laboratory to conduct projects to determine effects of ionizing irradiation and the pathogenesis of disease related to irradiations. Special research skills required.

PW-42

★

Small town of 2,000 population, located in Northwest Tennessee, desires a replacement for doctor leaving for Military Service, approximately January 1, 1954. Practice is of general practice type, with numerous home calls made, busy office practice and long office hours due to the type of population surrounding Greenfield. Any one interested please contact Nathan F. Porter, M.D., at Porter Clinic, Greenfield, Tennessee.

PW-43

★

Rapidly expanding industrial community in Southern East Tennessee desires general practi-

tioner. Population of town, 1,000, population of trade area, 6,000. Community cooperation promised in securing housing and office space. Medical Society cooperation also assured. PW-44

★

23-bed, privately owned hospital needs General Practitioner with surgical training immediately. PW-46

★

Physician to take over general practice in the Nashville suburbs. Present physician desires to enter residency training. Practice is young and growing rapidly. Local hospital facilities available. Various financial arrangements possible. PW-47

★

General Practitioner to replace doctor who will be called into Military Service in the near future. Well established practice in suburban district, Nashville. PW-48

★

Wanted: An associate, in general practice. Various arrangements possible. Nine room clinic, moderately equipped. Some operating facilities. EKG, BMR, and 100 MA X-ray machine. Two three-room apartments or one five-room apartment above office. PW-49

★

General Practitioner needed for work in the Paraplegia Section of the Surgical Service of a Tennessee Veterans Administration Hospital. PW-50

★

Town of 5,000 population, located in West Tennessee, desires general practitioner. Population of trade area 10,000. Community cooperation promised in securing housing and office space. Wonderful opportunity for a young doctor. PW-51

★

Wanted: Physician qualified to do general practice and surgery to take over established practice and 12 bed hospital in Dandridge, Tennessee. Facilities may be either purchased or leased. Ill health required disposal. Write or call Dr. S. D. Sullenberger, Dandridge, Tennessee. PW-52

ANNOUNCEMENTS

Southeastern Surgical Congress

The twenty-second annual assembly of the Congress will be held on March 8, 9, 10, 11, 1954, at the Dinkler-Tutwiler Hotel in Birmingham. The scientific program will feature panel discussion and lectures by noted authorities on a great variety of surgical subjects. Tennessee surgeons appearing on the program will be Dr. R. L. Sanders and Dr. Jack Greenfield, both of Memphis.

Further information and official program can be secured from Dr. B. T. Beasley, Secretary-Manager, 45 Edgewood Avenue, Atlanta 3, Ga.

International Academy of Proctology

The Sixth Annual Convention of the Academy will be held at the Palmer House, Chicago, on April 8, 9, 10, 11, 1954. There will be no registration fee. Further information and official program can be secured from Executive Office, International Academy of Proctology, 43-55 Kissena Boulevard, Flushing, New York.

Diseases of the Chest

A Postgraduate Course sponsored by the American College of Chest Physicians will be given February 15-19 at the medical schools of Tulane and Louisiana State Universities, New Orleans. This course is accredited by the American Academy of General Practice.

A.M.A. Convention Trip

Georgia physicians are planning a scenic trip for the A.M.A. meeting in San Francisco, June 21-25. The Moyers Travel Bureau, of Atlanta, is arranging a scenic 8,000 mile tour—20 days of educative vacation with five days in San Francisco for the A.M.A. Convention—hotels, trains and motor trips all reserved from June 13 to July 2—visiting the Canadian Rockies, Grand Canyon, California and Mexico. This special train for physicians will be called the "Southern A.M.A. Special." The charge for this all expense paid tour is \$445.00 (plus tax). Those interested may make arrangements with the Moyers Travel Bureau.

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Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

FEBRUARY, 1954

Number 2

Since so much depends upon the proper handling of gastro-intestinal bleeding, especially if of the more severe grades, this paper deserves careful reading.

MANAGEMENT OF GASTRO-INTESTINAL HEMORRHAGE*

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The purpose of this paper is to discuss the problem of massive gastro-intestinal bleeding from the standpoint of the internist member of the medical-surgical team, that properly should be jointly in charge of every patient with hematemesis or melena. There is much controversy as to what constitutes "radical" management as opposed to "conservative" management of massive gastro-intestinal bleeding. It is difficult in my opinion to define radical management unless it be procedures carried out at both ends of the scale. At the one end all bleeders are operated on forthwith, and on the other none is operated upon. The conservative method probably is best defined as that form of management which calls for surgical intervention only in that group of patients who will lose their lives if they are not operated on at once, and to carry out management in such a way that the operation can take place at a time most advantageous to the patient and to the surgeon.

A discussion of this nature usually evolves into a discussion of the management of bleeding from *peptic ulcer*, and properly so. Bockus² has estimated that 75 percent of all hematemesis and melena is from peptic ulcer. Therefore, three out of four times, one will be correct in assuming that the source is peptic ulcer. Perhaps it would be well to define hematemesis and melena: —*hematemesis* is the vomiting of gross blood, and *melena*, the passage of black, tarry stools. This latter may also include

the passage of large clots by rectum but does not include the passage of bright red blood.

Degree of Hemorrhage. Probably the first step in management is the estimation of the severity of the hemorrhage. Clinical shock appears after loss of more than 350 cc. of blood. Early the blood count may be deceptive and one must rely on signs and symptoms of shock, that is pulse, blood pressure, pallor, sweating, apprehension and restlessness. After the blood volume has stabilized the blood counts will present a truer picture and patients may be grouped, using Rosenaks¹ criteria, into four groups. Group I includes those whose hemoglobin is 12+ grams and whose red blood count is 4.0 million or better, group II, those whose hemoglobin is 9 to 11.9 grams and red count 3.0 to 3.89 million, Group III hemoglobin 6.8 to 8.8 grams and red blood count 2.25 to 2.99 million, and group IV, those whose hemoglobin is 6.8 grams or less and whose red blood count is 2.25 million or less. The first two groups are of no great concern as they nearly always stop bleeding at once and one can proceed with medical management and diagnostic measures. Groups III and IV require immediate, active, positive procedures as it is in these groups that death occurs.

Groups III and IV. The patients in these groups present a problem solved best by the combined efforts of a medical-surgical team, both internist and surgeon carrying the responsibility. The decision as to the proper procedures must be made by the two in complete agreement, as to blood replacement, feeding, diagnostic procedures, and

*Read before the Knoxville session of the International College of Surgeons.

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above all as to the optimum time for surgery. It has been shown that generally the mortality rate following surgery is lower in patients who are not operated on until bleeding has stopped. If surgery must be resorted to while the patient is actively bleeding this decision should be made in forty-eight hours or less. A patient, who after admittance continues to bleed, as manifested by a continuing pulse rate of 100 per minute and a systolic blood pressure of 100 millimeters of mercury or less, in spite of strenuous blood replacement, requires surgery as a lifesaving procedure. A patient who is admitted following an episode of massive hemorrhage and who starts to bleed again must also be operated on.

Transfusions. There is still a curious reluctance on the part of some physicians to give adequate blood replacement. Indeed, I have recently found that the theory of maintaining the blood pressure at just over the shock levels is still being taught in some medical schools. The mortality is significantly higher in patients when adequate transfusion therapy has not been carried out. Shock must be relieved and sufficient measures taken to maintain normal blood pressure levels if the surgeon is to have any chance of stopping the bleeding and preventing recurrence. In this connection subtotal gastrectomy is the procedure of choice. Ligation, excision, or fulguration are fruitless. The argument that raising the blood pressure to normal levels will bring about a recurrence of bleeding is sound as far as it goes in a small group of patients. These, however, are the very ones who must have early surgery to survive, so it is mandatory to keep them out of shock.

Prognostic Factors. Each patient presents an individual problem, but in general the following conditions on admittance of any patient with massive hemorrhage give a poor prognosis:—epigastric pain; shock; dyspnea; systolic pressure under 100 millimeters of mercury; pulse rate over 100 per minute; age 50 or older. The common denominator is the severity of the hemorrhage and each single finding is important only to the extent that it allows one to evaluate that severity.

A few more statistics before we proceed

to specific management may be in order. Bockus² has estimated that ten per cent of all adult males in the United States have or have had ulcer, and that five per cent of these will bleed. This figure seems low in the light of other reports, but he estimates that only twenty per cent of all ulcer cases are hospitalized and that the majority of those will be massive bleeders. He gives an over-all mortality from hemorrhage from ulcer at two and a half to three per cent. He goes on to state, however, that Bennett has shown that in the group who have lost fifty per cent of their cell volume the mortality is twelve per cent.

Management. Now for some thoughts on specific management. It is well to proceed cautiously in every case, even in the patient whom one places at first in group I or II because he may slip into group III or IV quite suddenly. For any bleeder, I carry out the following routine:—bed rest is required; initially nothing by mouth; and complete blood count, typing and cross matching are done. Pulse and blood pressure determinations are made every half hour until I am sure they are stabilized and the patient, temporarily at least, is out of danger. The surgeon is called and the history and physical findings and what laboratory data are immediately available are discussed. This I do in all cases, except in the very minor ones, because I want him to know we have a joint problem which may become urgent at any time.

When I am sure the bleeding has stopped and the patient stabilized, I start *feedings*, but only then, and very cautiously because recurrence of hemorrhage has often developed soon after the onset of feeding. Preliminary starvation is not desirable if protracted, but very little is lost if feedings are withheld for twenty-four hours. Cases are often encountered where any type of feeding will induce vomiting. Furthermore, it is impossible to treat the patient in shock by any kind of dietary management.

In my opinion the early feeding of heavy meals as advocated by Meulengracht defeats the basic principle of ulcer management which is to reduce motility and acid secretion. Foods of high secretagogue value are not indicated in the early management of

any ulcer patient. Why then would one use them in patients who, though they may not have pain, are much sicker than the patients with uncomplicated ulcers with pain? It is well to proceed cautiously with small amounts, two or three ounces of albumin water, gelatin water, or skim milk hourly, around the clock, supplying the balance of required fluids parenterally, until it is seen that oral feedings will be tolerated. Then it is possible to proceed with a Sippy type of regimen.

The use of *antacids* in bleeders is somewhat controversial since, characteristically, they have little or no pain. I usually do not begin antacid therapy until the second or third day. Occasionally, however, they are not well tolerated and they add a complicating factor to bowel hygiene.

The use of *coagulating materials* in solution in the stomach is of no value. They cannot be brought in adequate concentration to the bleeding point and since they are of protein composition they are digested like any other protein.

Intubation for removal of blood or for any other reason in the early stages is dangerous and fruitless. The tube is an additional irritant and psychologically bad, clots cannot be removed through it and it may cause increased trauma by contact and by encouraging vomiting.

Diagnosis. As I stated earlier, in the presence of massive bleeding, very little is lost if the source is considered a peptic ulcer unless another source is immediately apparent. The decision as to when to proceed with *diagnostic measures* depends entirely on the patients progress. If bleeding stops promptly and the patient is in group I or II, X-ray and other tests may be started at once, or within three or four days at the most. On the other hand, with groups III and IV it is better to wait ten days to two weeks after bleeding has stopped, even though by this delay a crater or a duodenal defect may not be found.

Recently Palmer⁴ reported a series of 121 military personnel who had been admitted to an Army general hospital with massive bleeding from the upper gastro-intestinal tract. In his paper he advocated the vigorous diagnostic approach. This called for

esophagoscopy, gastroscopy, and upper gastro-intestinal contrast fluoroscopy in the order named in the first few hours of hospitalization. Esophagoscopy was carried out in 66, gastroscopy in 112 and roentgenography in 120 cases. In most instances examinations were repeated either following an unsatisfactory effort or during later re-evaluation. He states that in only three cases was the site of the bleeding not found during the first week and that there was apparently no aggravation of the patients condition due to the procedures. He used ice water lavage before esophagoscopy and gastroscopy and advocated pressure techniques in roentgenography when indicated. Transfusions were used during the procedures when necessary. There were five deaths from hemorrhage and 19 were operated on for specific bleeding lesions. The endoscopic examinations were carried out at the bedside. With the proper set up, skilled help and adequate measures for supportive replacement, this scheme is very appealing in the attempt to arrive at an early diagnosis.

In my experience *gastroscopy* in the presence of active bleeding may well be unsatisfactory because a clean lens is necessary for a view. This means that the examination must be rapid, and unless preliminary ice water lavage is carried out, preferably through an esophagoscope, nothing will be seen. These procedures are in contrast to the usual "conservative" approach to the diagnosis of alimentary bleeding but are useful in selected cases.

When endoscopy is not immediately available, or when the set up is not conducive to good endoscopic examination, certain qualities of the type of bleeding may give one a lead as to the location of the bleeding point. *Esophageal bleeding* will usually show persistent bright red blood, although the patient may also vomit black blood previously swallowed.

Intragastric and intraduodenal bleeding will usually be associated with both hematemesis and melena, though not infrequently massive melena without vomiting is encountered. When a patient with massive melena vomits blood-free emesis, the bleeding area is probably below the ligament of

Treitz. The passage of bright red blood by rectum calls for inspection and examination of the anus and rectum by sigmoidoscopy first, and not, as so often is done, by a gastro-intestinal X-ray series.

Summary. The adequate management of gastro-intestinal bleeding is best carried out by a medical-surgical team acting in close cooperation. The medical management and the indicative for surgery has been considered.

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Obesity—Key to the Prevention of Diabetes. William H. Olmstead, M.D. *J. Michigan M. Soc.* 52:1057, 1953.

It is emphasized by the author that hypernutrition requires the secretion of large amounts of insulin. Fat is formed constantly from carbohydrate even when the caloric intake is not very high. More carbohydrate goes to form fat than to form glycogen, even when the weight is stationary. When fat is being formed the insulin need is at a maximum. Experimentally when the animal is starving and mobilizing his fat for fuel, no insulin is needed. Beta cells of the islets of Langerhan's rest during starvation and when a high fat diet is fed. The conclusion is that dietary fat does not require insulin. The obese usually ingest a diet containing at least 50% of carbohydrate. This requires insulin, as does the increased body weight with its increased metabolic and consequent insulin demands.

The functions of insulin are: (1) the formation of glycogen in the liver and muscles, (2) the oxidation of glucose, (3) the formation of fat from glucose and (4) the anabolism of proteins. It has been known for years that undernutrition results in the clinical improvement of the diabetic. Weight reduction in the obese diabetic may cause such a striking degree of improvement that the diagnosis of diabetes may actually be questioned. It is known that obesity precedes diabetes in 85 per cent of the cases. Among the obese individuals older than 40, one out of nine is a known diabetic, and one out of five is as yet an undetected diabetic.

Experimentally, obesity can be produced by

over-feeding, hypothalamic damage and occurs in a certain strain of mice. From work with these experimentally obese animals it is found that rapid eating is followed by the rapid elaboration of insulin by the pancreas with subsequent fat storage and obesity and an associated exhaustion of the beta islet cells. The genetically obese mice are diabetic and hypothyroid. However, these beta cells of the pancreas are normal, and the thyroid gland is microscopically normal. Radioactive acetate and pyruvate studies show these substances to be stored but not oxidized. There is very little liver glycogen formed. These findings suggest a possible hereditary combination of obesity and diabetes.

The information available from death statistics indicate that in the Scandinavian countries, Greece, the Netherlands, England and Germany during the war, when the population was forced on low calorie diets, the mortality rate from diabetes reached the lowest level of the decades.

Olmsted concludes that obesity is as important a factor as heredity in the etiology of diabetes. Although one-third of all diabetics are not overweight, it is possible that hereditary diabetes, being a recessive factor, will not make its appearance unless over-nutrition occurs, particularly later in life. He emphasizes the need for the general education of the population in the avoidance of obesity. We as doctors need to learn more about physiological mechanisms of hunger and appetite, their curtailment and general care in the prevention of over-nutrition.

(Abstracted for the Tennessee Diabetes Association by Albert Weinstein, M.D., Nashville.)

As a complication of widespread metastatic malignancy, effusions into the serous cavities may be most distressing. Anything which can be done to ameliorate these conditions should be carried out. Radioactive isotope therapy may offer itself as an aid.

RADIOACTIVE GOLD IN THE PALLIATIVE TREATMENT OF MALIGNANT EFFUSIONS

O. A. COUCH, JR., M.D., Nashville, Tenn.

Carcinomatosis is often accompanied by effusion into one or more of the serous cavities. Such effusion may mechanically interfere with the function of the lungs, heart, and gastro-intestinal tract. The loss of protein into the effusion may be considerable. In 1947, Shepherd, Wells, Hahn and Goodell¹ described the use of radioactive colloidal gold (Au^{198}) in the treatment of malignancies. In 1947, Hahn injected radiogold into the peritoneal cavities of two patients with hypernephroma. In 1949, Müller suggested its use in the treatment of malignant effusion.² Since then several groups of investigators have reported favorably on its use for this purpose. Notable among these have been the reports of Andrews and his co-workers at Oak Ridge in studying the distribution of the gold following its intracavitary injection. They described the pathology associated with its use as well as the clinical results.^{3,4,5} Several series have been reported by Staraasli,⁶ Walter,⁷ Rose,⁸ and recently by Seaman.⁹

Radioactive gold has a half life of 2.7 days. This is long enough to give adequate therapeutic effect without the danger of prolonged irradiation. Because of insolubility and chemical inertness, the material has none of the toxicity of the gold salts. Although radioactive gold emits both beta particles and gamma rays, the former accounts for 90 to 95 per cent of the irradiation effects on the tissues. Since the beta particle penetrates only a few millimeters, the radiation effect is limited to the immediate locality of the gold injection. In three or four days, a large part of the gold has been

fixed on the serous surfaces.¹ This fact permits the withdrawal of fluid which has formed subsequent to the gold injection, without loss of therapeutic effect and without great radiation danger to the operator. There is no significant penetration of the gold into the neoplasm or into the normal tissues adjoining the cavity. Small amounts are absorbed through the lymphatic channels into the blood stream whence it is removed by the liver, spleen and bone marrow. Negligible quantities are excreted in the urine.¹

The mechanism by which radiogold exerts its beneficial effect is not definitely established.¹⁰ Hahn demonstrated a lethal effect on free cancer cells in the fluid. Only very superficial radiation damage to the tumor and fibrosis of the tumor surface are noted.⁴ Submesothelial fibrosis has been demonstrated in some but not all patients.⁴ None of these mechanisms seems to account for its mode of action in all cases.

Methods

Because of radiation hazard, the manner of administration is important. Various modes of administration have been described and will not be repeated here.^{1,7,8,11,12} We have used several different technics. In evaluating methods of administering therapeutic quantities of gamma emitting isotopes, it is important to consider not only the instantaneous rate of radiation exposure of the personnel concerned, but the total duration of time for which these individuals are subjected to general body irradiation. Some of the methods which seem to have the advantage in terms of lower rates of body irradiation to the administering physician are so involved and slow that the total exposure is higher than with one of the simpler and more rapid methods. We have

*These patients were treated with the collaboration of Paul F. Hahn, Ph.D., Director of the Cancer Research Laboratory, Meharry Medical College, and George R. Meneely, M.D., of the Vanderbilt University Radioisotope Committee.

found teamwork to be important in minimizing exposure.

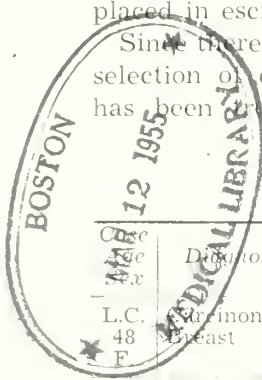
Immediately prior to the instillation of gold, the fluid is aspirated from the cavity to be injected. A complete removal is not attempted because the presence of some fluid is necessary to assure the operator that the needle is in the cavity. After the injection, the patient is kept in a private room or at least six feet from the nearest patient for twenty-four hours and then is discharged with instructions to stay in a separate room at home for at least a week. Following the treatment, nursing care is reduced to the bare necessities and visitors are not allowed. The instruments used in the injection are placed in escrow until decontaminated.

Since there are no definite criteria for the selection of cases, a variety of conditions has been treated. (See Table 1.) Two

been limited to palliative treatment in incurable neoplasms. Some patients treated were practically terminal as is seen by the short survival time following treatment. In the future, criteria for prophylactic usage may be established. Instillation of radio-gold into the peritoneal cavity at the time of an operation for carcinoma of the ovary might be particularly useful in preventing implants.

In contrast to deep X-ray therapy, patients treated with radioactive gold have experienced almost no ill effects. One of our patients had a diarrhea which lasted for almost a week following intraperitoneal injection. No nausea and no vomiting were observed. One patient had persistent fibrosis following intrapleural injection. See Figure 1-C, D.) Although two patients had leukopenia before treatment, no significant

Table 1



Case No.	Disease	Fluid Control	No. Instillations	Site	Dose Milli-curies	Date	Survival Time (Mos.)	Remarks
L.C. 48 F.	Carcinoma, Breast	Excellent	3	Peritonea Peritonea Pleural	120 120 70	5/22/52 10/2/52 7/14/53	14	3-4 wk. from time of treatment to disappearance of fluid.
S.R. 55 F.	Carcinoma, Breast	Excellent	3	Pleural Peritonea Peritonea	100 112 139	8/28/52 9/18/52 1/7/53	5	Nutritional edema.
N.C. 76 F.	Carcinoma, Undetermined Primary Site	Good	1	Pleural	55	9/12/52	2	Thoracenteses before treatment: 9/4, 9/12, 9/13, 9/16, 1952. Thoracenteses after treatment: 9/27, 10/7, 10/25, 1952.
C.J. 33 M.	Malignancy, Type Undetermined ? Endothelioma	Excellent	2	Peritonea Peritonea	122 125	9/30/52 1/27/53	15	Paracenteses: 11/5/52, 1/2/53, and May, 1953.
C.H. 75 M.	Malignancy, Undetermined Primary Site	Excellent	1	Pleural	69.25	3/10/53	5	Thoracenteses: 2/14/53, 2/16/53, 2/24/53. After treatment: 8/6/53.
T.W. 56 F.	Lymphosarcoma	Undetermined (Short Survival)	1	Pleural	72	12/23/53	1½	Thoracentesis before treatment: 12/16/53. Thoracentesis after treatment: 12/26/53.
J.F. 64 M.	Carcinoma, Rectum	Good	1	Peritonea	120	12/30/53	1	Palpable peritoneal implants.

of our patients had carcinomatous rectal shelves due to peritoneal implants and one patient had palpable peritoneal implants. Two of these patients obtained excellent results and one had a good result despite these findings. So far the use of radiogold has

depression of the white count was noted in either these or other patients treated.

The dosage for intrapleural use has varied from 55 to 72 millicuries. The dosage for intraperitoneal use has varied from 112 to 139 millicuries. Three patients received

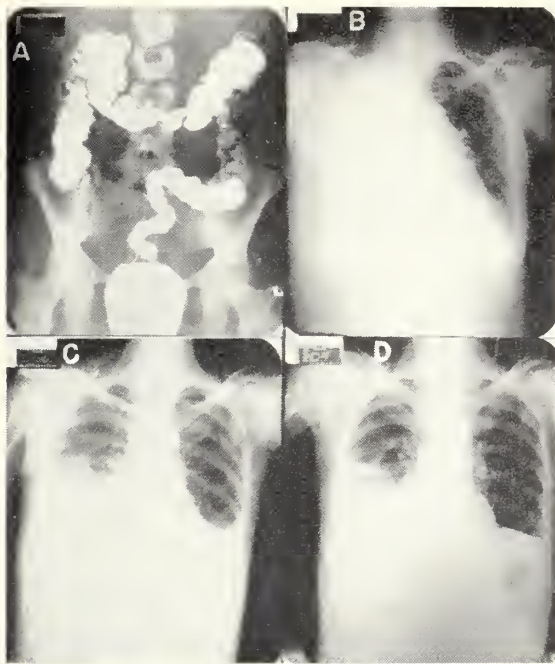


FIGURE 1-A (Case L.C.). A barium enema shows filling defects due to peritoneal implants metastatic from carcinoma of the breast. Marked ascites was present.

B. (Case N.C.). There is a massive effusion in the right pleural cavity. Malignant cells were demonstrable in the fluid but the primary site was not determined.

C. and D. (Case S.R.). C. shows fluid in the right pleural cavity. It was necessary to remove 1,200 cc. of fluid nine days after the injection of radioactive gold. However, without further treatment, the chest film (D) four months later shows a decrease in the amount of fluid with residual pleural change.

two peritoneal injections. The interval between injections was four to five in these cases. Two patients received both peritoneal and pleural injections at different times. Both pleural and peritoneal injections have not been used at the same time in the same patient.

Results

The results of treatment have been rated as excellent in four cases. In these four cases, the survival time was of such length that the effectiveness of the treatment could be definitely established. Two survived five months and two survived 14-15 months with satisfactory control of fluid. Repeated injections were required in two. In one a single injection gave satisfactory control. Two were estimated as having good results. One of these required removal of fluid soon after treatment. Immediately prior to treat-

ment, this patient had required thoracenteses with the removal of large quantities of fluid at intervals of one to three days in order to keep her out of severe respiratory distress. Following treatment, the intervals between thoracenteses were lengthened to ten to eighteen days. In view of the fact that the intervals were becoming progressively longer, it is possible that the fluid formation would have stopped, had she survived longer than two months following treatment. The other patient with a result estimated as being good survived five weeks after treatment with little reformation of fluid. In one the survival time was so short that no estimate of effectiveness could be given.

In this small series of patients, good or excellent results were obtained in all but one patient in whom the short survival time made a follow-up impossible. These results would tend to confirm the opinion of others that the intracavitary injection of radioactive gold is of definite value in controlling malignant effusions.

Case Reports

Case 1. L.C., a 48 year old white female, was first admitted to Vanderbilt University Hospital on May 5, 1952. Four years prior to admission she had had bilateral mastectomies for carcinoma of the breast. These were followed by local X-ray therapy and she was placed on male hormone with marked masculinization. Approximately one year prior to admission, she developed chronic constipation, regurgitation of food, bloating and epigastric pain.

Physical examination revealed a markedly emaciated woman with a husky voice and marked hypertrichosis. There were firm matted axillary and posterior cervical nodes. Both breasts were absent. The abdomen was markedly distended with shifting flank dullness and a fluid wave. On rectal examination there was a shelf which was fixed, non-tender and irregular. Following paracentesis, an irregular, firm left upper quadrant mass was felt. The liver was not palpable.

Significant laboratory work included a white count of 4,750, a Hgb. of 11.8 Gm., a serum bilirubin of 0.4 indirect, a cephalin flocculation of 2 plus, total serum proteins of 7.28, with albumin 4.17 and globulin 3.11 Gm. present. Pathological section of the residue from the centrifuged peritoneal fluid revealed carcinoma cells.

X-ray film of the chest at time of admission showed no evidence of metastatic disease. A gastro-intestinal series and a barium enema showed evidence of multiple bowel implants. (See A,

Figure 1.) The visualized bones showed a generalized increase in sclerosis thought to be compatible with osteoblastic metastases.

On May 22, 1952, 120 millicuries of radioactive gold 198 were injected intraperitoneally.

On June 22, 1952, the patient was readmitted with thrombophlebitis of the left leg for which she received anticoagulant therapy. At this time her white count was 4,400 and her hemoglobin was 10.1 Gm. At the time of admission there was some shifting flank dullness present but by the time of her discharge on July 12, 1952, this fluid had disappeared.

On September 29, 1952, she was readmitted with a recurrence of her abdominal ascites noted for a week. Also, multiple nodules on the skin in widely scattered locations were noted. One of these was removed and pathological section showed only chronic inflammation. An X-ray of the chest at this time was again negative. On October 2, 1952, 120 millicuries of radioactive gold were injected into the peritoneal cavity. Laboratory work showed a white count of 4,300, a Hgb. of 11.6 Gm. and a total serum protein of 7.24 Gm. with 3.76 albumin and 3.48 globulin.

The patient was not seen again until June 4, 1953. She had done well until about 6 weeks prior to admission when she had again noted the formation of abdominal fluid. Physical examination showed the presence of intra-abdominal fluid and in addition there was fluid in the right pleural cavity. There was also peripheral edema. Significant laboratory work revealed a total protein of 7.3 with an albumin of 3.6 and a globulin of 3.7 Gm. per cent. The cephalin flocculation test was 4 plus, the Hgb. 6.8 Gm. X-ray examination of the skull showed osteolytic lesions of metastatic carcinoma. Metastatic lesions were also seen in the ribs.

Because of her progressive downhill course and because of the fact that she had developed pain referable to her bony metastases, it was decided that an ovariectomy and bilateral adrenalectomy should be done. On June 24, 1953, Dr. B. F. Byrd, Jr., carried out these operations. The procedures were well tolerated and the patient was regulated on a maintenance dose of cortisone without difficulty. Pathologic examination of the tissues removed showed metastatic adenocarcinoma in the ovary, fallopian tubes and adrenal glands. On July 14, 1953, 70 millicuries of radioactive gold were injected into the right pleural space. The patient died about two weeks following discharge, apparently of cerebral metastatic involvement. It is interesting to note that this patient was able to continue her work as a school teacher almost to the time of her last admission.

Case 2. S.R. was a 55 year old white woman who entered Vanderbilt University Hospital on August 19, 1952. She had had a left mastectomy in 1947 for carcinoma of the breast. One month prior to admission she developed abdominal symptoms and had a biopsy of the liver performed

which revealed adenocarcinoma metastatic from the breast.

Physical examination revealed an area of local recurrence at the mastectomy site. There was dullness and diminution of the breath sounds in the right base. A large fixed nodular epigastric mass and shifting flank dullness were present. There was a hard nodular rectal shelf. There was a 2 plus pitting edema of the extremities.

Laboratory work showed a Hgb. of 10.4 Gm. and a 4 plus cephalin flocculation. X-rays of the skull and chest showed metastatic carcinoma. There was pleural fluid present of the right. On August 28, 1952, 100 millicuries of radioactive gold were injected into the right pleural cavity. On September 9, 1952, the patient returned with marked nutritional edema which responded to salt restriction, albumin, and diuretics. She had peritoneal fluid and on September 18, 1952, she was given 112 millicuries radioactive gold into the peritoneal cavity. It was necessary to remove 1,200 cc. of fluid from the right pleural cavity. On this admission she had 11.9 Gm. of Hgb. and 6,050 white cells. The total serum protein which at first was 6 Gm. with an albumin of 2.55 and a globulin of 3.45 was raised to 7.01 with an albumin of 3.45 and a globulin of 3.56 Gm. at the time of discharge.

The patient was started on testosterone. On January 7, 1953, she returned with a recurrence of her abdominal fluid and 139 millicuries of radioactive gold were injected. A white count was 5,500. A chest film showed a definite decrease in the amount of pleural fluid and some residual fibrosis. (See Figure 1, C and D.) The patient died about a week following discharge.

Case 3. N.C. was a 76 year old white woman admitted to Vanderbilt University Hospital on September 4, 1952, because of shortness of breath. Examination revealed dullness over the entire right side of the chest. X-ray examination of the chest showed opacity of the entire right hemithorax with a fluid type density. (See Figure 1, B.) On September 4, 1952, a thoracentesis was performed and 3,000 cc. of smoky fluid were removed. Pathologic examination of this fluid showed metastatic adenocarcinoma. Thoracenteses were necessary on September 12, 13, and 16, 1952, because the rapid reaccumulation of the fluid produced respiratory embarrassment. On September 17, 55 millicuries of radioactive gold were injected into the right pleural cavity. Thoracenteses were necessary on September 27, October 7 and 25. The patient died on November 14, 1952, without appreciable reaccumulation of fluid.

Summary

1. The results of the use of radioactive colloidal gold (Au^{198}) in the palliative treatment of pleural and peritoneal effusions in seven patients are reported.

2. The results confirm the opinion of others that the intracavitary use of this sub-

stance is a satisfactory method of controlling effusion in most patients with carcinomatosis.

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Intermittent Claudication of the Hip and the Syndrome of Chronic Aorto-iliac Thrombosis. de-Wolfe, V. G., LeFevre, Fay A., Humphries, A. W., Shaw, M. B., and Phalen, G. S. *Circulation* 9:1, 1954.

These authors, reporting 78 patients seen at the Cleveland Clinic, review the diagnostic and therapeutic problems posed by chronic occlusive arterial disease affecting the terminal aorta and the iliac arteries which produces symptoms and signs of arterial insufficiency in the regions below. Although sporadic reports had appeared earlier, Leriche, writing in the French medical literature in 1940, first systematized the clinical manifestations of a syndrome often referred to since by his name. There is evidence that insufficient attention has been paid to this disorder. Graham first described thrombotic obliteration of the terminal aorta and iliacs in 1814. Welch in 1899 collected 59 cases of aortic occlusion of which some fourteen were of the gradual thrombotic occlusion variety. There is confusion in the literature because many authors have tended to lump together pathological anatomical findings following embolic and "saddle thrombus" acute aortic occlusions and the gradual thrombotic occlusion here considered. The former, a familiar clinical misfortune, abrupt in occurrence and rapidly followed by circulatory disaster in the lower limbs, is sharply distinct from the clinical syndrome produced by the latter which is a disorder of slow and subtle onset and which frequently misleads the examiner. Barnett, Moorman and Merrick summarize post mortem findings in a number of large series, concluding that the disease is present in about 0.1% of autop-

sies, 90% of the time in men, certainly a vastly more frequent affair than is recognized clinically.

Leriche emphasized the prolonged insidious development of a syndrome characterized by unstable penile erections, "weariness rather than pain" in the legs, intermittent claudication (in the calf) and atrophy of one, the other or both lower limbs without trophic changes. Late manifestations were cyanosis, desquamation, ulcers at pressure points, and gangrene. These latter might be due to extension of the arterial lesion or concomitant venous thrombosis. Others have broadened the picture, showing that it is somewhat less specific in its manifestations than implied by Leriche. The present authors found impotence infrequent and call attention, for the first time, to the manifestations in the hip which they consider intermittent claudication. The location of the pain frequently led to an erroneous first impression that the patient presented an orthopedic problem. Clinically, the absence of femoral artery pulsations is the leading feature, and this in the presence of palpable aortic pulsations below the diaphragm. The practitioner who fails to palpate the femoral pulse deprives himself and his patient of the opportunity to detect the cardinal sign of this syndrome as well as coarctation of the aorta. The latter is distinguished by absent or virtually absent abdominal aortic pulsations and evidence of collateral circulation about the thorax, particularly nicking of the rib margins seen in the chest X-ray. Hypertension is uniform in coarctation, variable in terminal aortic occlusion. Intermittent claudication of the hip, in the opinion of

(Continued on page 65)

The physician's part in the investigation of food poisoning is clearly outlined in this discussion of staphylococcal food poisoning.

STAPHYLOCOCCAL FOOD POISONING

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The early medical history of outbreaks of food poisoning placed emphasis on the role of the salmonella and shigella type of organisms as the cause of such epidemics. Though there were many epidemics of food poisoning for which these organisms could not be incriminated and though there were scattered reports during the first thirty years of the century of other probable and proved etiologic organisms,^{1,4} serious consideration was not given to them until about 1940. Since that time the physician has increasingly found it necessary to dispense with the old concept that most cases of food poisoning are water or milk borne and usually due to a so-called enteric organism. Milk and water-borne outbreaks are now exceptional rather than the rule.^{7,10} Infections due to enteric organisms still occur and are reported. However, a very high percentage of the cases and epidemics of food poisoning which now occur are due, not to enteric organisms but to certain hemolytic staphylococci.^{5,6,11,12} In the past fifteen years much has been written about staphylococcal food poisoning^{1,4,6,11,12} but a large portion of it has appeared in the bacteriological and public health journals which often are not readily available to the general practitioner.

The purpose of this article is to point out the relative frequency of occurrence of outbreaks of staphylococcal food poisoning over a ten year period in a county of over 200,000 population and also to point out the importance of the role of the family physician in preventing epidemics of food poisoning.

Local Outbreaks

A complete record has been kept in Hamilton County† of all reported cases and epidemics of food poisoning. Over a ten year

period, from January 1, 1944, to December 31, 1953, the record shows that there have been sixteen reports of food poisoning involving one or more persons. Such reports resulted in immediate epidemiological investigation. Among other things, an attempt was made to identify the contaminated common article of food and to secure specimens of the foods involved and specimens from the patients for bacteriological examination and identification of the offending microorganism.

The sixteen recorded outbreaks of food poisoning are presented in table form (Table 1) to show the date of the report, the number of persons involved, the food vehicle, the incubation period, the duration of the illness and the types of staphylococcus responsible, including the number of organisms per gram of vehicle.

The two milk-borne epidemics in Table 1 (No. 1, No. 2) were due to the unauthorized adding of raw milk to a pasteurized milk supply, the organism having come from a herd in which there was mastitis. No milk-borne epidemics have occurred since 1945. No outbreaks involving large numbers of people and local food handling establishments have occurred since 1947. There were, however, four such epidemics from 1944 through 1947, the two due to milk and two (Table 1, No. 3, No. 6) due to contaminated pies. Of the total of sixteen outbreaks, two were due to milk, one to cheese, one to steak, one to ham, one unknown and eight were due to pies. The incubation period in all cases but one (Table 1, No. 15) was six hours or less, frequently in the neighborhood of two hours. The duration of illness was quite variable but usually a matter of hours. The variable numbers of the specific staphylococcus per gram of contaminated food, and the possible relationship between these numbers and the incubation period and duration of illness can be seen from the table. Outbreaks since 1947 have been pri-

*From the Chattanooga-Hamilton County Health Department, Chattanooga, Tenn.

†Hamilton County, Tenn., population, 1950 census, 208,255.

Table 1

Outbreaks of Food-Poisoning Occurring in Hamilton County in a Ten Year Period.
(January 1, 1944, to December 31, 1953.)

No.	Date	Number Persons Ill	Food Vehicle	Incuba- tion in Hours	Duration Illness in Hours	Etiologic Agent, Organisms Per Gm. Vehicle	
1	7-44	60	Milk	1/2-5	4-8	Hemolytic, Staphylococcus Albus	198,000,000
2	2-45	30	Milk	2-6	6-12	" " Aureus	31,000,000
3	5-46	44	Chocolate Pie	2-4	8-48	" " Aureus	?
4	4-47	3	Coconut Cream Pie	2	6-8	" " Albus	116,630,000
5	10-47	8	Coconut Pie	1-4	4-12	" " Albus	160,000,000
6	10-47	46	Coconut Pie	1-4	6-48	" " Aureus	371,200,000
7	3-48	3	Coconut Pie	2	4-8	" " Albus	70,400,000 (95%)
8	4-49	4	Coconut Pie	1-2	4-12	" " Aureus	298,000,000
9	3-50	2	Coconut Pie	1-2	?	" " Aureus	196,000,000
10	10-51	4	Boston Cream Pie	2-3 1/2	2 1/2-12	" " Aureus	175,500,000 (98%)
11	1-52	3	Steak	4-6	4-6	" " Aureus	14,000
12	1-52	4	Hamburger	2-6	6-8	" " Aureus	400,000
13	6-52	5	Cheese	2-6	4-8	" " Albus	227,500,000
14	1-53	4	Ham	1/2-1	24-96	" " Aureus	2,600,000,000
15	11-53	5	T-Bone Steak	7-8	4	" " Albus	360,000
16	12-53	2	?	4	4	" " Albus (from stools)	

marily of the "family" type involving from three to five people living in the same home. This type of small outbreak frequently is not recognized as due to food poisoning and, therefore, may be reported late or not at all. In our locality these minature epidemics have often been reported by the patients rather than by their physicians.

Vehicles of Transmission

Our experience and a review of the literature indicates an amazing variety of foods that have been contaminated with enterotoxin-producing hemolytic staphylococci and have thus caused gastro-intestinal episodes. Processed meats and custard and cream pies are recognized offenders, especially the latter.¹² Pies were the responsible vehicles in the majority of our outbreaks (Table 1). However, our experience and the medical literature indicate that scores

of foods and food dishes (far too many to enumerate) have served as vehicles for food poisoning outbreaks of this nature. The physician should bear in mind that cream pies and pastries, sandwich mixes, puddings, creamed, ground and processed meats, sauces, dressings, salads and similar articles of food are good media for the growth of these bacteria, but it is also well to remember that steak, noodle soup and even orange juice have served as vehicles. Preconceived notions as to which article of food may be contaminated can readily lead one astray and frequently may result in discarding of food specimens that prove in the laboratory to be contaminated. With a patient suspected of having food poisoning, he or his family should be advised to save and immediately refrigerate all remaining portions of food from the suspect meal or meals.

There is no satisfactory method of gross detection of contaminated foods. Appearance, odor, and taste are usually not altered in any way by staphylococci or other bacteria causing food poisoning. In two instances, because of obvious spoilage, hamburger meat was condemned by us before cooking, and upon examination in the laboratory found to be very heavily contaminated with hemolytic staphylococci, but this is the exception and not the rule.

Laboratory Examination

Since cases of food poisoning frequently go unreported or are reported tardily, and since patients often discard foods they think responsible for their symptoms unless otherwise advised, it is common, on investigation, to be hampered by an insufficient number of specimens or no specimens at all. The importance of saving and refrigerating all remaining portions of food for laboratory examination has been pointed out. It is just as important to secure specimens of the vomitus and stool from the patient (in sterile containers) and send them immediately to the laboratory for examination for organisms capable of causing food poisoning. The physician who sees the patient when he is acutely ill should feel responsible for obtaining these specimens since he is the only one in a position to obtain them at the proper time.

When the remaining articles of food and the patient's specimens are received in the laboratory, they are then examined bacteriologically for all types of organisms which may cause food poisoning. Only by finding such an organism in one or more articles of food and finding the same organism in the specimen from the patient can one assume a causal relationship.

Depending on the type of organism found, the laboratory carries out tests to further identify the etiologic agent, and to prove that it is capable of causing food poisoning. Here it is also important for the investigator to give as complete an epidemiological report as possible to the laboratory so that unnecessary procedures and waste of time may be avoided.

In the case of staphylococcal food poisoning, the organism is identified by growing it

on tryptone glucose extract agar to demonstrate pigmentation and by transferring to blood agar plates to show hemolysis. It is then placed on a selective medium such as phenol-red mannitol agar with 7½ per cent sodium chloride and also tested to see if it coagulates rabbit plasma.^{2,8} If the organism is "mannitol positive" and also "coagulase positive" it usually can be assumed that this particular hemolytic staphylococcus produces enterotoxin. Further proof of enterotoxin production and the ability to cause food poisoning rests on such procedures as the Dolman kitten test,⁹ and feeding tests with rhesus monkeys⁸ which are not available to the local laboratory. Even though not all coagulase positive strains of hemolytic staphylococci can be proved by feeding experiments to produce enterotoxin,⁸ such tests, though bacteriologically desirable, have not been found essential to our preventive program.

Signs and Symptoms

Food infections due to salmonella organisms have an incubation period varying from six to forty-eight hours, usually about twenty-four hours. Staphylococcal food infections, on the other hand, have a short incubation period usually six hours or less. We have had one staphylococcal family outbreak with an incubation period of eight hours perhaps due, in part, to a smaller than usual number of organisms per gram of food (Table 1, No. 15). However, the onset is often within two hours and may be within thirty minutes.

In the typical case this short incubation period is followed by nausea lasting a few minutes to an hour and thereafter by sudden and usually quite severe vomiting. Nausea and vomiting may be more or less continuous or there may be several bouts of vomiting over a period of a few hours. Abdominal cramps and marked diarrhea occur and the patient rapidly becomes prostrated. Moderate fever of 100-101 degrees often accompanies the episode and it may be 103 degrees or higher. However, fever may be absent or the temperature subnormal in cases with severe prostration or shock. Vertigo, cold sweats and pallor often appear early in the course of the infection. The

patients in severe instances are apprehensive and may show mental depression as well as a variety of signs and symptoms including rapid, or weak and thready pulse, arrhythmias, chills, cyanosis, muscle twitchings, numbness of the extremities and shock.

The length of typical episode may be only two to six hours after which time the color improves, the pulse becomes stronger and the patient expresses a desire for food or drink. The patients whom we investigated, however, though often over the severe vomiting and diarrhea in a few hours, remained weak and suffered from anorexia, nausea, and abdominal cramps or discomfort for from eight to forty-eight hours, occasionally longer.

The mortality rate from staphylococcus food poisoning is very low but apparently some authentic fatalities are on record.⁵

Prevention

The prevention of food infections of all types depends on the cooperation of family physician and health department. Early reporting of the suspected case is of extreme importance, and the assistance of the physician in securing specimens from the patient and in advising him to preserve all remaining articles of food is necessary. These are preliminary essentials to the epidemiological investigation by health department personnel. Such investigation then goes beyond the making of a diagnosis in an attempt to incriminate a certain microorganism and common article of food as the source of the contamination. The quicker the preliminaries are carried out and the sooner the investigation is launched, the greater are the chances to find the source of the food poisoning organism. Only then can something be done to prevent repeated occurrences.

The physician should realize that sources of the infecting organism are usually temporary and often transient. Insanitary food handling practices often result in contamination of food but contamination may also occur in the presence of excellent food handling. Epidemics have been traced to insanitary or uncovered vessels, to improper refrigeration, and to poor food handling techniques of various kinds, such as inadequate

heating or cooking temperatures, or the "holding over" of susceptible food items. However, with faulty technics or not, the organism usually comes from some person or persons who harbor it. For example, one investigation of a pie company revealed that the contaminating organism did not come from cuts or abrasions on the employees hands but from the noses and throats of the workers who were suffering from an epidemic of "colds." Of nineteen employees, four had positive nose and throat cultures on one day, and two days later two of these still had positive cultures, as did four other employees whose cultures were previously negative. A few days later no hemolytic staphylococcus organisms of the type causing the epidemic were found in any cultures from the employees and the contamination of pies ceased. In another instance, involving home-made pies in a small restaurant, it seemed impossible to find the source of the staphylococci since excellent technical procedures were used by the obese negress who was cook. But on a particularly hot day we observed this food handler making pies and noticed an occasional drop of perspiration fall from the forehead into the "pie-mix" or onto the pies she removed from the oven. (On the following cool day it is doubtful if this food handler would have unconsciously demonstrated her method of contamination.) The organism found in the contaminated pies was the same as was isolated from the cook's skin. Proper instruction and the wearing of a low tight chef's hat prevented recurrences.

Such examples emphasize again the need for the immediate reporting of outbreaks of food poisoning and the need for their early investigation.

Summary

Over a ten year period, January 1, 1944, to December 31, 1953, in Hamilton County, sixteen outbreaks of food poisoning were recorded. One hundred per cent of these outbreaks were proved to be due to contamination of foods by strains of hemolytic staphylococci.

Immediate reporting of the case of food poisoning, correct advice to the patient and

his family in saving and refrigerating all remaining food portions from the suspect meal or meals, and the securing of early vomitus and stool specimens (in sterile containers) from the patient, by the physician, are essential preliminaries to the following epidemiological investigation.

Providing that the same organism is recovered from the patient's specimens as is isolated from a common article of food, it can be assumed that it was the cause of the illness. Proof that the organism can cause food poisoning then depends on bacteriological investigation in the laboratory.

Traditional or preconceived ideas concerning the causative agent or the contaminated food in a given case or in an epidemic tend to lead one astray, and may hamper diagnostic and investigative procedures.

Contamination of food by food poisoning organisms cannot be detected grossly by appearance, taste or odor.

Though certain foods such as cream pies and processed meats are known to be frequent offenders in serving as vehicles for staphylococcal food poisoning, nearly every known food has been reported as a vehicle for this type of food poisoning.

Prevention of epidemics of food poisoning depend on cooperation between the family physician and the health department.

In the majority of instances, with the early assistance of the family physician, the epidemiological investigation will reveal the source of the contaminating staphylococcus and will also result in the prevention of further outbreaks from that source.

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PREFERRED PROCEDURES

The Detection of Cancer of the Uterus

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Malignant disease of the organs having to do with reproduction continue to predominate as the major factor in death due to tumors in the female. As to whether cancer of the breast or the uterus predominates is only of statistical academic importance. Of undoubted significance, however, is the importance of detection of these lesions at a time when current methods of therapy offer a likelihood of complete eradication of the growth.

Whereas, it is widely accepted that detection of a tumor of the breast by the woman herself commonly initiates the events resulting in examination by the physician and appropriate treatment, the responsibility for detection of uterine cancer often is solely that of the examining physician. Frequently this is in the absence of even minimal symptoms suggestive of a pelvic disorder. The physician bears a tremendous responsibility therefore, for carrying out adequate pelvic examination on the female even though the presenting complaint may be far removed from the reproductive organs.

It is unfortunate, indeed, that the over-all cure rate of malignancies of the uterus is less than fifty per cent even though expert treatment in the form of adequate irradiation therapy or extensive surgery is carried out after the diagnosis is made. The keynote of success in the treatment of uterine malignant disease continues to be detection of the growth at a time when modern therapeutic methods are successful. It falls to the lot of the gynecologist and the radio-therapist to carry out definitive therapy, but his opportunity for early diagnosis is limited by the comparatively few patients who come to his office for examination. Much more of the burden of early detection rests on the family physician and internist who provide general medical care to many adult females.

It is fortunate, indeed, that relatively few "specialty" tests are required to make the diagnosis of uterine cancer, if the disorder

is kept in mind at the time of any physical examination. The fact that cervical cancer greatly predominates in uterine malignancy makes early detection with a high percentage of accuracy more feasible, inasmuch as the cervix may be easily palpated, inspected and a biopsy performed. The less common endometrial cancer, on the other hand, is usually not obvious to the examiner, but the patient's history frequently gives suggestive clues which make diagnostic procedures possible at a time in the course of the growth when eradication of the tumor can be effected in a high proportion of instances. Because of the difference in location of cervical and endometrial cancers and some variation in the age groups when these two diseases are likely to occur, the symptoms must be considered with respect to each type of disease.

Cancer of the Cervix

The symptoms of cervical cancer are: bleeding, discharge and pain, the relative frequency of symptoms being in this order. Bleeding, initially, is almost invariably minimal in amount and is of the contact type, having a tendency to occur on minor trauma to the vaginal portion of the cervix, especially following intercourse and the use of the douche. It is seldom frightening to the patient and may well be dismissed by her as insignificant. Discharge, when it occurs, may be scant in amount, is usually thin in consistency rather than gelatinous, may or may not be blood-streaked, but frequently has a foul odor, due to the presence of putrefactive organisms in the growth. Although severe pain is an evidence of advanced cancer with involvement of nerves in the pelvis far removed from the cervix, minor discomfort in the pelvis may be associated even with early lesions.

Inspection of the cervix may reveal the presence of an obvious growth, but in the earlier stages, little variation from the normal appearance may be detected. It is impossible to distinguish by gross inspection between the so-called "erosion" and early superficial carcinoma at the external os. Occasionally, inspection reveals no obvious lesion whatsoever, but probing of the canal of the cervix produces considerable bleeding

which leads one to suspect ulceration of the endocervix. There is a marked tendency for cervical cancer regardless of its appearance, to be friable and firm, and at times palpation of an eroded cervix will confirm the suspicion of cancer when simple inspection is inconclusive.

Fortunately, the cervix is almost insensitive to the biopsy knife, which lends ease to adequate removal of tissue for microscopic study. A large number of relatively satisfactory biopsy instruments are available, which simplifies the technique of removing tissue from both the portio and the area of the cervical canal. Such instruments should be a part of any adequately equipped examining room. Bleeding from the biopsy site is easily controlled by commercially available cotton tampons or office prepared gauze sponges with a string attached for removal by the patient the following morning. The impression that such a biopsy operation is to be reserved for the gynecologist is erroneous, and in many instances precludes early detection because of the complexities involved in securing consultation in every instance.

The use of the Papanicolaou technic offers much when cytologists of sufficient training are available but is not necessary in the diagnosis of cervical cancer. Cytology laboratories of undisputed accuracy are not available in many areas whereas competent histologic study of tissue is universally available.

It is believed by many that a causative relationship exists between chronic infections in the cervix and the subsequent development of malignant changes in this organ. Therefore treatment of benign chronic cervicitis by means of electro-coagulation or electro-conization may contribute to the prevention of future cancerous degeneration.

Endometrial Cancer

Although instances of uterine cancer have been reported over an extremely wide age distribution, cervical cancer is largely a disease of late reproductive life, while endometrial carcinoma has its origin more commonly after the menopause. By far, the outstanding symptom of endometrial cancer is that of post-menopausal bleeding. The

evaluation of this symptom is made complex at the present time by the frequent employment of estrogenic hormones to alleviate the symptoms which attend the period of the climacteric. It would seem that a feeling of security, however, is not justifiable in the face of post-menopausal bleeding even though there is a definite history of estrogenic therapy.

When confronted with the problem of post-menopausal bleeding, especially if it is recurrent and associated with a discharge, definite steps should be taken to make a positive diagnosis. The endometrial biopsy instrument may be used for the removal of small bits of endometrium for microscopic study as an office procedure. The biopsy report of a benign state of the endometrium cannot be considered as final proof that the patient is free of endometrial cancer because complete exploration of the uterine cavity is impossible by this means. A positive diagnosis of cancer on endometrial biopsy, however, is conclusive. Should a benign process be reported on endometrial biopsy in the post-menopausal woman with recurrent vaginal bleeding, the minor operation of curettage should be carried out as soon as practical. Complications from this procedure are exceedingly rare at the present time, even though there may be concurrent major systemic disease in a patient at advanced years. It is fortunate that bleeding from the uterus is an early sign of endometrial cancer and if the necessary diagnostic procedures are carried out early in the course of abnormal bleeding a high percentage of permanent cures can be expected.

Until some different mode of treatment is developed, the cure rate from uterine malignant disease will continue to be largely dependent upon early detection and prompt treatment. Facilities should be available in all examining rooms which provide ease of pelvic examination for both the doctor and his patient. A few simple tools should be at hand for obtaining tissue for microscopic study, so that physicians dealing with pelvic disease may offer more in treatment. Thus may be eliminated the hardship, disappointment and suffering which so frequently attend the palliative therapy of uncontrollable neoplastic disease.

STAFF CONFERENCE

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Intra-epithelial Carcinoma of the Cervix Complicated by Pregnancy*

DR. PHIL C. SCHREIER: For about a year and a half routine cancer detection smears have been made in our prenatal clinic. This morning we have two illustrative patients for discussion,—cases of intra-epithelial carcinoma of the cervix complicated by pregnancy. Although we do not wish to confuse the issue today by also discussing invasive carcinoma, Dr. Green has agreed to present a brief survey of the literature concerning pregnancy complicated by invasive carcinoma of the cervix as a background for our thoughts on further emphasis of earlier diagnosis of both the invasive and pre-invasive lesions.

DR. C. R. GREEN: Carcinoma of the cervix is an infrequent finding in pregnancy. This disease is more commonly found in the 45 to 55 year old age group. If it is encountered in pregnancy it is usually in the women in the 35 to 40 year age group. The incidence is variously estimated from one in 1,000 to one in 20,000 pregnancies. The average being one in 7,000 to 10,000 pregnancies. Prognosis in this disease as in all types of carcinoma has improved in recent years. Sarwey in 1908 reported a mortality of 53 per cent when patients were allowed to go to term and deliver per vagina. Eight-tenths per cent died before delivery and many died very shortly thereafter. The five year survival rate at that time was variously estimated in the neighborhood of about 10 per cent. Today the prognosis is much improved. The five year survival rate is almost identical with carcinoma of the cervix unassociated with pregnancy within comparable age groups. Obviously the prognosis depends on the stage of the development of the tumor, the microscopic picture, the age of the patient, and the stage of gestation.

Most of the lesions seen in pregnancy are Stages I and II. The consensus of opinion of most of us is that the average five year survival rate is 30 per cent. Maino and Mussey of Mayo's reported a 26 per cent five year survival rate in a series of 20 cases. Palmer and Rhinehard of Buffalo reported a 27.5 per cent survival rate in 124 cases. The range therefore in most reports is from 17 per cent to 32 per cent, the average being 30 per cent. The over-all five year survival rate, or average curability in carcinoma of the cervix in a nonpregnant patient is also 30 per cent.

DR. SCHREIER: Thank you, Dr. Green. Now I shall ask Dr. Adams, our Chief Resident, to present the two case histories.

DR. JOHN Q. ADAMS: Case No. 63498, L.R., a 34 year old colored female, gravida five, para four, was first seen on September 22, 1952, in the prenatal clinic of the John Gaston Hospital. At that time she was found to be seven months pregnant, and was asymptomatic. Pelvic examination revealed a moderate endocervicitis. Routine vaginal smears were positive for malignancy, and a cervical biopsy on September 22 revealed intra-epithelial carcinoma. The patient was allowed to continue the pregnancy and delivered normally on December 17, 1952. The patient was seen in the post partum clinic on February 26, 1953, at which time a follow-up biopsy was performed. This confirmed the diagnosis of intra-epithelial carcinoma. A vaginal hysterectomy was performed on April 2, 1953, and microscopic examination of the surgical specimen also demonstrated the intra-epithelial carcinoma. The patient was last seen in the gynecologic clinic on August 5, 1953. There was some induration about the vaginal cuff, but this was not thought to be residual disease and was not biopsied.

Case No. 141639, S.C., a 20 year old colored female, gravida seven, para three, was first seen in the prenatal clinic of the John Gaston Hospital on March 9, 1953, and was found to be six and one-half months pregnant. She had been sent in because of positive vaginal smears. She was asymptomatic. Examination revealed a moderate erosion of the cervix. She was admitted to the John Gaston Hospital on March 15, 1953, for biopsy of the cervix. This biopsy was reported as intra-epithelial carcinoma involving endocervical glands. The patient delivered normally on May 15, 1953. The post partum curettement and cervical conization performed on September 22, 1953, confirmed the diagnosis of intra-epithelial carcinoma. Due to her age this patient was to be followed. She was last seen in the gynecologic clinic on October 28, 1953, and at that time the cervix was said to have been clean. She was to have vaginal smears in three months.

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DR. SCHREIER: These two cases that have been presented bring out different facets of the problem as illustrated by the way they were handled. Dr. Everett, you have been participating in this program rather actively and have been assigned the job of taking the biopsies where the smears are suspicious. Do you have any comment on these two cases as to why they were offered to present our problem?

DR. B. E. EVERETT: These two cases merely reflect our present attitude in the management of intra-epithelial carcinoma. This attitude is affected principally by the patient's age and desirability for children. As to the pregnancy itself, it is felt that there is insufficient evidence of a deleterious effect on or by the lesion to warrant its interruption. Since the vaginal cytology program was inaugurated here in the summer of 1952 there have been a total of twenty-four positive or suspicious smears in pregnant women. Of the 24 patients, 21 have had ante partum cervical biopsy. The tissue diagnosis on each of these 21 cases are as follows:

Intra-epithelial carcinoma with probable or possible foci of invasion—2 cases.

Intra-epithelial carcinoma—9 cases.

Squamous cell metaplasia, with atypism, reserve cell hyperplasia, and/or chronic cervicitis (some believed to be probable intra-epithelial carcinoma)—10 cases.

Five of the nine cases of intra-epithelial carcinoma were confirmed by further tissue studies post partum. In the remaining four, of the originally diagnosed 11 cases, a single repeat biopsy post partum failed to reveal evidence of the lesion diagnosed during pregnancy.

As to treatment, the two cases with focal invasion were handled as invasive carcinoma. Of the 9 cases of intra-epithelial or pre-invasive carcinoma, 4 were treated by total hysterectomy, and the remaining 5 are being followed.

The 10 cases detected as suspicious by smear during pregnancy and showing on the antepartum biopsy suspicious atypical metaplasia represent a group being studied and followed by repeat smears. This group has had only a single biopsy each during pregnancy. Future study and follow-up

will determine whether they develop significant lesions.

DR. SCHREIER: Now we have the problem pretty well crystallized, and would like to open it for general discussion.

DR. HENRY B. TURNER: Dr. Schreier, one question that I want to bring up is this. I personally have always been reluctant to biopsy the pregnant cervix in the office for fear of bleeding that couldn't be controlled in the office. I notice that Dr. Adams in his second case, perhaps, too, in his first case, mentioned that when the patient was biopsied she was brought into the hospital. There are two questions I'd like to ask. First, what type of biopsy was done? Was a routine four point biopsy of the cervix performed, or was a more extensive so-called cold knife conization of the cervix done? Secondly, for those who have been working in the cancer clinic and carrying out these biopsies, would they recommend that this procedure, either cervical biopsy or cold knife conization of the pregnant cervix, be acceptable to the great majority of men in private practice, doing this work, as being a safe office procedure?

DR. SCHREIER: Dr. Everett, will you answer Dr. Turner's questions?

DR. EVERETT: Yes, sir, the first of the patients Dr. Adams brought up was biopsied in the clinic, that is true, and the second one was sent into the hospital. At the outset of this program we were trying to biopsy these pregnant women in the clinic, and this first patient was seen within a few months after the program was initiated. However, after a few months we realized that it was impractical to do this because of the intensive bleeding we sometimes encountered following the biopsy. Several patients had to be admitted to the hospital for packing of the vagina and cervix, and two or three patients actually required a transfusion. Therefore from about January, 1953, on we have admitted all the pregnant patients for biopsy. Dr. Turner asked about the type of the biopsy. We do the routine four point biopsy of the cervix in practically all cases. There have been two cases in which the pathologist thought that conization was indicated even in view of the pregnancy because of the possibility of invasive cancer.

DR. SCHREIER: Well, then, if the pathologist justifies it you assume the risk of possibly aborting the patient by doing a cold knife cone?

DR. EVERETT: We only do that though after we discuss the case thoroughly with the pathologist and review the sections. If he feels very strongly that there is a possibility of invasive cancer we are afraid to take the chance of not doing it. As I said, we have done two cases, and in one the pathologist's original impression was confirmed, invasion being present, and in the other the lesion was only intra-epithelial but we felt that the conization had been justified in view of the original impression.

DR. TURNER: Let me ask another question, Dr. Everett. Do you think that conization might stimulate a spontaneous abortion?

DR. EVERETT: I think there is a definite possibility of this. In fact, one of the cases I just mentioned did abort following conization. But as I said, we felt that the procedure was justified even so because of the possibility of invasive cancer.

DR. TURNER: Then your advice to private practitioners would be not to perform cervical biopsy either the four punch variety or cold knife conization of the cervix in their office, and you would consider this strictly a hospital procedure. Is that correct?

DR. EVERETT: That is correct.

DR. TURNER: Dr. Schreier, you mentioned at first, and I think all of us here were also taught, that the diagnosis of intra-epithelial carcinoma during pregnancy was really of no clinical significance, and that there are changes in the cervix of the pregnant uterus that give the microscopic picture similar to that of carcinoma in situ. However, at the present time there seems to be a lot of controversy among pathologists, and there are articles appearing in the literature which tend to refute this pretty widely recognized feeling that the changes are indistinguishable.

DR. SCHREIER: Dr. Green, did you have some comment to make on this phase of the question?

DR. GREEN: It appears that in our series we are getting a lower confirmation of

intra-epithelial carcinoma following pregnancy and delivery than in the usual series reported around the country. I know that there is about a 90 per cent, or better, confirmation in most of the series reported in the literature at the present time; it appears in our cases that there are only five out of nine that have been confirmed. Dr. Everett, what has happened to these cases? What is the explanation that this lesion has not been confirmed?

DR. EVERETT: Dr. Green, I think that probably one of the main troubles throughout the country is the matter of the interpretation of the original lesion. So many pathologists have different personal interpretations of the criteria for diagnosis, but assuming that you have a bona fide intra-epithelial lesion during pregnancy, I can see but only one of three courses. One, the lesion may be missed on the second biopsy. Two, the lesion may have been removed by the original biopsy,—I know it is probably far-fetched to assume that this could happen. Three, the lesion may have regressed. Assuming that the original diagnosis was correct, only those three things can happen as I see it. I do not believe it is fair to assume that the lesions in these four cases have regressed, just on the basis of the single biopsy obtained immediately post partum, but feel that further and longer follow-up will tell us the true story.

DR. SCHREIER: Well, now, we certainly are in sympathy with the responsibility that the pathologist has in this new field. However, that does not erase the importance of it and the clinician and the pathologist have to work together to try to arrive at some definite conclusion. Our pathologists and our clinicians have gone very slowly, they are following cases and possibly will help to contribute to the final answer in this way. Each in turn will have the opportunity to follow the cases sufficiently long to answer some of the present day unanswerable angles of this big, new problem.

DR. TURNER: Dr. Schreier, I personally feel that that is one of the biggest problems in the whole field, the following up of patients with positive smears, whether they be pregnant or nonpregnant. Of course, I believe that the problem is compounded

when pregnancy coexists with this diagnosis. Generally speaking there again it is a problem of pathologic interpretation and the clinician and the pathologist have to work in close cooperation. If the pathologist feels that there is frank invasion then the case should be handled as prescribed for true invasive carcinoma associated with pregnancy, depending upon many factors, including the parity of the patient, her age, the period of gestation, the viability of the baby, to mention only a few.

DR. GREEN: In line with this, I would like to ask a question. Is carcinoma of the cervix in pregnancy actually a more severe disease than in the nonpregnant patient except for the fact that you have an added factor to deal with,—that is the pregnancy? Does the fact that a person during pregnancy has an increased vascularity and an increased amount of connective tissue, actually add to the gravity of the situation, or is it comparable to that of the nonpregnant woman as far as treatment is concerned? The literature shows that the outcome is the same if all factors are equal. The five year survival rate seems to be essentially the same.

DR. SCHREIER: Of course you know that that question has been debated throughout the literature over a period of many years and, so far as I can determine from my reading, it is not answerable because various series of cases are handled so differently as to the grading of the carcinoma. I think that at the present time, from what I've been able to find out, we would say that carcinoma is not particularly influenced by pregnancy. Clinically, during pregnancy it takes on a great deal of activity but this is probably false because of the congestion and associated edema incident to the pregnancy. I believe that we have to regard invasive cancer as a serious disease regardless of the age of the patient and whether pregnancy is superimposed. For this morning's discussion, however, we are concerned with the detection of cancer during pregnancy, either the pre-invasive or the invasive, and what to do about it. I'd like to come back to Dr. Adams who presented the two cases and ask him a question. What is

the basis of the handling of these two cases in such different manners?

DR. ADAMS: Dr. Schreier, the basis for handling the two cases differently was primarily age. The first patient presented was a 34 year old, gravida five, para four, and the second one was a 20 year old, gravida seven, para three. Because of the younger age of the latter patient it was decided that she should be observed, whereas the former patient being over age 30 was treated by simple hysterectomy.

DR. SCHREIER: Dr. Turner, do you have any ideas about why the age limit, and at what age limit should we draw that line.

DR. TURNER: It is rather difficult to be arbitrary. A whole lot has to do with the patient's desire as to further child-bearing. We are following patients in the clinic now in the younger age group and most of these women do desire more children. The danger, of course, incident to this plan of attack is the follow-up itself, and the willingness of the patient to come back for repeated check ups. I think that factor in itself would limit which patients we select for this more conservative approach.

DR. SCHREIER: Then you are saying that if a patient desires several children that you would permit her to have several if she permits herself to stay under close observation.

DR. TURNER: Her course can be followed by one of two technics. One, of course, is to observe her at frequent intervals, every three months for example, with repeated Papanicolaou smears. Cervical biopsies perhaps do not have to be taken at quite the same frequency; the frequency in the clinic I believe at the present time is at anywhere from three to six month intervals. Is that correct, Dr. Adams?

DR. ADAMS: Yes, that is correct. We usually take vaginal smears at three month intervals, whereas biopsies are usually taken at six month intervals unless otherwise indicated.

DR. GREEN: Dr. Adams, I notice the second case was delivered per vagina. I would like to ask if there is any feeling that a vaginal delivery in intra-epithelial carcinoma may traumatize the cervix or be more prone to spread the disease than de-

livery in some other manner, say by cesarean section.

DR. ADAMS: Dr. Green, we have had very little hesitation in delivering patients with intra-epithelial carcinoma of the cervix vaginally.

DR. TURNER: That is confirmed, too, is it not, in the series that we have. In no case that Dr. Everett reported was more than an intra-epithelial lesion demonstrated during the postpartum period. Is that correct?

DR. EVERETT: That is correct.

DR. SCHREIER: I am certain there are other questions and observations on this new, provoking and puzzling problem. It is not only puzzling to the clinician, but I assume and would say that it is doubly puzzling to the pathologist whose responsibilities are increasing as a result of this attempt to find carcinoma in its pre-invasive stage. In summarizing this problem as we see it in our Department, it becomes apparent that we are primarily conservative. That whereas we think pathologists with great experience can give us a more definite answer as to whether this is an intra-epithelial carcinoma or the changes associated with pregnancy, we feel that the clinical procedure of watching the patient through the pregnancy and checking her postpartum over a period of time will be

necessary to answer that in finality. In the meantime we have arbitrarily drawn the line at some point around 30 when a patient has had what would be regarded as adequate children to her satisfaction and then if the lesion persists we would rather perform a hysterectomy, either by the abdominal or vaginal route. Under that age we regard it as safe and justifiable to permit her to have more children if she so desires, and in fact we would be reluctant to do a hysterectomy under 30 even if she desired it. It seems to me that during the prenatal period, while the patient is coming to the doctor regularly, a real opportunity is available to educate the patient in this new technic of the early detection of cancer. This also enables the doctor to make observations on the earliest signs of cancer and the earliest detectable way of determining that there is a cancer or pre-invasive cancer. We now are in the beginning of a new age when young women in their teens and twenties during their pregnancy will have series of cytologic smears, and as time goes on these same patients should be followed not for one year, nor for two years, but maybe for 30 to 40 years. Certainly we can look forward to the unfolding of a most fascinating and valuable detection and progressive development of cancer in a large group of women.

(Continued from page 53)

these authors, is pathognomonic of arterial occlusion above the inguinal ligament and it occurs in almost 100% of their patients.

The etiology of gradual terminal aorto-iliac thrombosis is arteriosclerotic in the vast majority of instances, although there are occasions where aneurysm, trauma, or uterine or spinal column neoplasm has accounted for the trouble. This reviewer has seen one instance of congenital atresia of both iliacs which produced a puzzling syndrome of the sort here described when military duty forced the patient to prolonged and unaccustomed exertion.

Aortography, in the hands of deWolfe, LeFevre, and their associates, was invaluable as a diagnostic aid. The technique they employ is well described and their results beautifully illustrated.

This reviewer was impressed by their uniformly good visualizations, having recent experience of two instances where the conventional technique gave unsatisfactory films in patients with clear-cut symptoms and signs.

A variety of surgical procedures have been performed for relief of the arterial insufficiency. These authors conclude that none of those reported give results as satisfactory as conservative treatment with close observation. They believe operation is contraindicated until a practical and satisfactory method of excision and grafting is established. They feel the disease is usually very slowly, if at all, progressive and consider the prognosis for the conservatively treated patient to be good over a large number of years.

(Abstracted for the Middle Tennessee Heart Association by G. R. Meneely, M.D., Nashville.)

CLINICOPATHOLOGIC CONFERENCE

John Gaston Hospital Memphis, Tenn.

Hyperparathyroidism*

A 29 year old colored male truck driver was admitted to the Medical Ward of the John Gaston Hospital, complaining of severe frontal headache for 3 weeks, and intermittent vomiting for 6 months with subsequent loss of weight of about 40 pounds.

Six months prior to admission he began having sudden bouts of projectile vomiting without nausea. Vomiting occurred about 30 minutes to 1 hour following a meal, but was not related to the type of food eaten. Vomitus did not contain evidence of blood or bile. The patient usually could retain one out of 3 meals a day. He had about 3 loose yellow stools per day. There had been no abdominal pain. Appetite had remained good.

Three weeks previously, he began to experience a severe, unrelenting, dull frontal headache which occasionally radiated to the temporal areas. Sleep was not prevented; in fact, he was sleeping more than he was prior to his present illness. Blood pressure readings in the receiving ward were: 60/40, 70/40 and 90/60.

He had two syncopal attacks on the day of admission. He had noticed some exertional dyspnea. For the past few months, nocturia had occurred—four times each night.

He had been seen in the Out-Patient Department 5 months previously for the same complaints of vomiting. Physical examination at that time was not remarkable except for a blood pressure of 140/90. Public Health chest X-ray was reported as negative. Barium swallow revealed no abnormality of the esophagus, stomach, first and second portions of the duodenum. There was a question of partial obstruction in the area between the second and third portions of the duodenum. He received ten drops of tincture of Bella donna before each meal which alleviated his symptoms. Subsequent weekly blood pressures were 120/75 and 135/90. The VDRL was positive through one dilution and became negative in 3 weeks.

He had received injections for syphilis about ten years previously and had been treated for gonorrhea twice.

Physical examination revealed a well developed, fairly well nourished, lethargic colored male in no acute distress. Temperature was 99.6° F., pulse 76/min., respirations 20/min., blood pressure 120/70 mm. Hg.

Lung fields were clear. Heart was not en-

larged, the apical rate and the pulse rate were the same and the rhythm regular; no murmurs were present. Abdomen was flat, no masses were palpable, no tenderness noted, bowel sounds were normal. There were a few small nodules palpable in the neck and inguinal areas. Neurological examination was not remarkable except for a tendency to fall to the right, a negative Romberg, generalized mild muscular weakness, slight hyperreflexia of biceps tendons bilaterally and absent abdominal reflexes.

Laboratory examination—Blood: Hematocrit 35, buffy coat 1 vol. % WBC 11, 900/ cu.mm. Differential: bands 2, segs. 81, lymphs 14, monos 2, eos. 1%. NPN 75 mg/100 cc. VDRL negative. Agglutinations for typhoid, proteus x 19, tularemia, undulant fever were negative. Serum: CO₂ combining power 21 mEq/l, Cl 105 mEq/l. Total protein 5.5, albumin 3.4, globulin 2.1 gm/ 100 ml. Total bilirubin 0.8. Urine: pH 5.5, sp. gr. not done, protein negative, sugar negative. Microscopic: 3-5 RBC, 15-20 WBC/HPF.

X-rays: Skull, marked coarsening of bony architecture. In the frontal area there is a suggestion of a cotton-wool pattern. Heart was normal in size and contour. Lung fields were clear.

Course: On the second hospital day at 6:30 a.m. the patient complained of severe chest pain. A physician was not called. Acetyl-salicylic acid was given. He apparently showed no further change until about 7:00 p.m. when he complained of shortness of breath. The skin was cool, slightly cyanotic and moist. The pulse was unobtainable. Course dry rales were heard throughout the lung fields. The heart sounds were distant and weak. Breathing was rapid and shallow. He became incontinent of urine, took one gasp of breath and expired.

DR. MASTON K. CALLISON: Dr. Lipscomb will discuss this case.

DR. ALYS H. LIPSCOMB: To be extremely charitable, I think this case is characterized by the utmost paucity of clinical data. It turns itself fairly well into a guessing game. Most of the differential diagnoses which I will offer have been suggested already by the more astute members of the medical classes and I was very happy to see that.

We have here an apparently healthy, young, colored male (that is, if we exclude the usual venereal disease history) who develops projectile vomiting without evidence of obstruction, or disease of the gastro-intestinal tract or electrolyte imbalance, which persisted for 6 months before he died and undoubtedly contributed to his considerable weight loss. This was followed by severe headaches beginning 3

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weeks before death. On the day before he died, several episodes of syncope and hypotension occurred, whereas previously he had been normotensive.

Knowing no more than this, all of the symptomatology points toward the central nervous system. We have neurologic findings which are admittedly minimal, yet we have no record of pupillary reflexes or of an electroencephalogram. We have no record of what was done in the receiving ward to elevate the blood pressure, if anything was done, and nothing of the family or personal history of the patient.

As far as objective findings are concerned, we have a mild anemia, a slight leukocytosis, azotemia, a slight pyuria, and a fever of slight degree, as well as a history of diarrhea. The terminal event I believe to be acute left heart failure with pulmonary edema. Putting all that together we don't come out with very much.

From the standpoint of differential diagnosis, the neurologic signs and symptoms suggest the possibility of an intracranial neoplasm, either benign or malignant. This diagnosis, however, does not explain the hypotension, the uremia, nor the cardiac death. The possibility of an intracranial vascular abnormality such as a congenital aneurysm of the circle of Willis which was slowly leaking and which ruptured with a terminal pulmonary edema must be entertained for the same reasons but, again, why was he hypotensive? The hypotension interferes with the diagnosis seriously throughout the entire analysis as does the evidence of renal insufficiency. A meningitic, or encephalitic, or meningoencephalitic process, with or without a localized granulomatous lesion (tuberculoma or gumma), with or without military tuberculosis is a wild, unsubstantiated guess. This would lay a foundation for a terminal adrenal cortical insufficiency in favor of which we have suggestive facts in the history and findings (nausea, vomiting, diarrhea, weight loss, hypotension, azotemia) but the expected characteristic electrolyte changes were absent.

A collagen disease, such as polyarteritis nodosa, is a possibility since we had multiple system symptoms with evidence of in-

volvement of blood vessels in the kidneys, the gastro-intestinal tract, the central nervous system, and perhaps the adrenals. I don't think I have seen a case of terminal polyarteritis nodosa without hypertension, however.

There must be other facts that we don't know in this case to explain this patient's exodus. I would like to see the X-rays now and have them demonstrated to you.

DR. AVERY B. BRINKLEY: The chest film shows the heart to be within normal limits of size, but left ventricular enlargement is quite evident. The base of the neck shows soft tissue enlargements bilaterally. There is no calcification within them. The lung fields show no actual infiltration, but in the right upper lung field extending from the hilar region we see some fluffy densities which have the appearance of very early congestive changes. The remainder of the lungs show nothing abnormal. The bony structures of the chest, especially the distal ends of the clavicles, demonstrate demineralization of bone; therefore, the basic bony architecture stands out somewhat more prominently. The upper GI series showed nothing abnormal in the esophagus or stomach. The duodenal bulb and the first and second portions of the duodenum were normal. It was thought at fluoroscopy and on one of these films that at a point between the second and third portions of the duodenum there was a constriction, representing extrinsic pressure by the superior mesentery artery. The skull shows a generalized radiolucence representing demineralization of bone such as was seen in the chest. This demineralization again makes the basic architecture of the skull more outstanding, especially in the frontal region. Nothing else remarkable is seen in the skull.

DR. LIPSCOMB: Thank you. This is an appropriate spot to digress pertinently about X-ray studies in general. In the first place, I would like to emphasize the value of a routine chest X-ray. One gets information from a chest X-ray which is considerable. One gets information about the soft tissues of the thorax and neck. One gets information about the bony structures of the thorax, ribs, thoracic spine, and the cervical spine. One gets information about

the lung fields, the cardiac silhouette and great vessels, and the diaphragm. I know of no examination in medicine which is available to all of us so readily and for such a small cost from which one can obtain so much helpful knowledge. It is too bad if we don't utilize all the facts which are apparent. Frequently we look at one feature or another and forget to evaluate a chest film systematically by studying each of the structures which have been mentioned. I think that was misleading in this case. We do not have all the findings apparent on this chest film and the films of the gastro-intestinal series reported. This fact does not excuse us as clinicians for this omission. Every physician should view critically each X-ray study he requests, interpret it himself, and learn not to depend on the roentgenologist's opinion as final. Furthermore, it should be emphasized that the public health chest X-rays, while excellent screening procedures for pulmonary tuberculosis, are small and should not be considered a substitute for the large chest X-ray as a diagnostic procedure in difficult, obscure, problem cases.

Now, I would like to ask Dr. Brinkley if the lamina dura is present about the teeth? He says that it is not, and that is a very significant point, I think, since absence of the lamina dura occurs in generalized metabolic bone disease. Secondly, is this a cyst in the mandible in the area to which I pointed? He says that he doesn't believe that it is.

We now have considerably more information from the X-rays than was reported in the protocol. Tying the facts together at this point, and respecting the law of parsimony, I think it is obvious to all of us now what the diagnosis is. I believe this man died a chemical death, that his hypotension and left ventricular failure with pulmonary edema was the result of hypercalcemia as a result of parathyroid poisoning, so-called "hyperparathyroidism." There were features which suggested hyperparathyroidism from the outset. As you know hyperparathyroidism is characterized by symptoms and signs relating to bones, relating to hypercalcemia per se, and relating to the kidneys. This patient had neurologic and cardiac complaints and abnormalities,—nausea,

vomiting, diarrhea, and weight loss which are due to the hypercalcemia per se. Terminal findings of renal insufficiency of nocturia, pyuria, microscopic hematuria, and azotemia were demonstrated. No symptoms were discovered to point toward the skeletal system. Objective findings in the bones are those of generalized decalcification and loss of the periodontal membrane. Fractures and cysts which are often seen in osteitis fibrosa generalisata are not present.

My diagnosis is hyperparathyroidism due to either (as is always the case) single or multiple adenomata, or hyperplastic hypertrophic parathyroids, or carcinoma of the parathyroid gland. In the latter respect I think we should be extremely cautious and, on the basis of percentages, consider carcinoma as a very unlikely possibility. Up until the last 4-5 years (and I have not combed the literature since that time) there had been only 3 authentic cases of functioning parathyroid carcinomata reported. We are faced with the problem of trying to decide next whether the hyperparathyroidism in this case is primary or secondary. There is very little to suggest that it is secondary. Certainly there is no long standing history of renal disease with long standing azotemia, acidosis, hypertension which would implicate the kidneys. I believe that, had this been the case, the diagnosis would have been established before death. I think this is primary hyperparathyroidism.

Clinical Diagnosis: Parathyroid adenoma producing primary hyperparathyroidism.

DR. CALLISON: Dr. Williams, will you give us the pathological findings?

DR. WILLIAM L. WILLIAMS: It is left for me to demonstrate the result of the hyperparathyroidism in this patient and to demonstrate the cause of the hyperparathyroidism.

At autopsy, this was a well developed and well nourished colored male even with the loss of 40 pounds. Within the thoracic cavity there was a minimal amount of fluid in each of the pleural spaces. Within the pericardial sac there was approximately 300 cc. of a translucent yellow fluid. The heart weighed 350 Gm. The epicardium, endocardium and valves were unchanged. A yellowish-grey streaking was present

throughout the myocardium. These streaks were about 1 mm. wide and 3 to 4 mm. long. This yellow streaking is definitely abnormal. The differential problem grossly is whether it represents fat or some other material. Since it was firm and gritty, the material was interpreted as representing calcium. The lungs were both quite heavy weighing approximately 1,000 Gm. each. They had a very peculiar appearance that was characterized by a grittiness and a fine granularity that was somewhat trabeculated and approximated the alveolar pattern in the gross. It has been characterized by some as being best described as a lung that you might dip in water, then freeze and then allow to partly thaw. The liver was not remarkable grossly. The kidneys were both enlarged, the right weighing 330, the left 360 Gm. The cortices of the kidneys were pale, the medullas were somewhat red with yellow streaking, again suggesting calcium. The other viscera were not grossly abnormal. The course of the superior mesenteric artery was examined and there was no obstruction of the intestinal tract. The remarkable thing noted during the gross examination was the friability of all of the bone. The cranial vault was removed with difficulty because of its tendency to splinter. The bone was thickened and greyish-yellow throughout. The vertebra were also extremely soft. A mass approximately 4 cm.

in greatest diameter weighing 16 Gm. was found at the lower pole of the left lobe of the thyroid gland. This mass was not covered by thyroid tissue. This nodular mass was a pale yellow color and very friable, grossly resembling a parathyroid adenoma. The other parathyroids were not enlarged.

The microscopic structure of the adenoma and the related changes in other organs is demonstrated in the photomicrographs (Figs. 1-A, 1-B, 2-A, and 2-B). The first photomicrograph (Fig. 1-A) is that of the parathyroid adenoma. This type of parathyroid change is the most common. The single adenoma is said to account for approximately 80 per cent of the cases of primary hyperparathyroidism. Multiple adenomas account for a small percentage of the rest, then occasionally there is a generalized hyperplasia of the glands and lastly, as Dr. Lipscomb pointed out, carcinoma of the parathyroid glands is rare. Secondary hyperplasia of the parathyroids is usually on the basis of a primary renal lesion.

Carcinoma of the parathyroid gland is a difficult diagnosis for the pathologist to make. Bizarre cells are seen commonly in the parathyroid adenomas and, yet, these anaplastic cells notoriously do not metastasize.¹ The presence of metastases is certainly the best criterion of carcinoma. The cells in this adenoma are very large, have an eosinophilic cytoplasm, and are not as

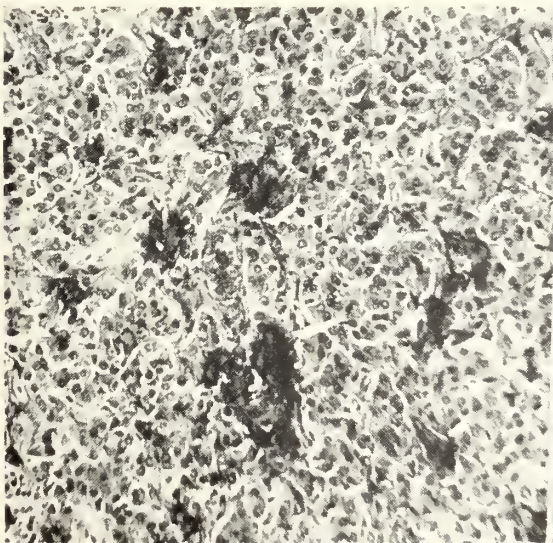


FIG. 1-A. Parathyroid adenoma, chief cell type. Calcium deposits are scattered throughout. (X105.)

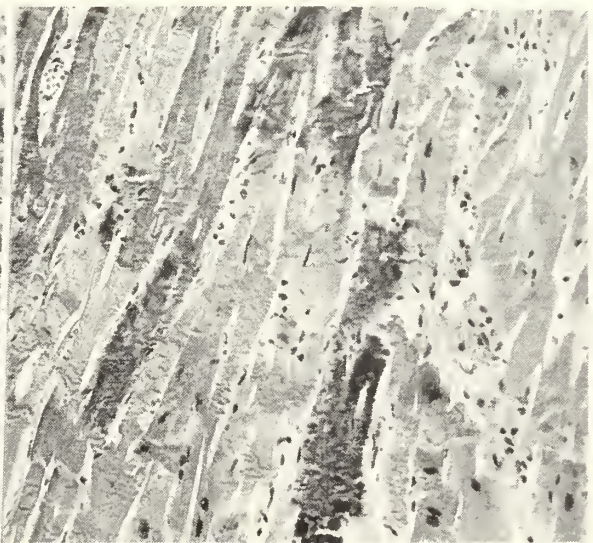


FIG. 2-A. Myocardium. Calcium is present in the darkened muscle bundles. (X105.)

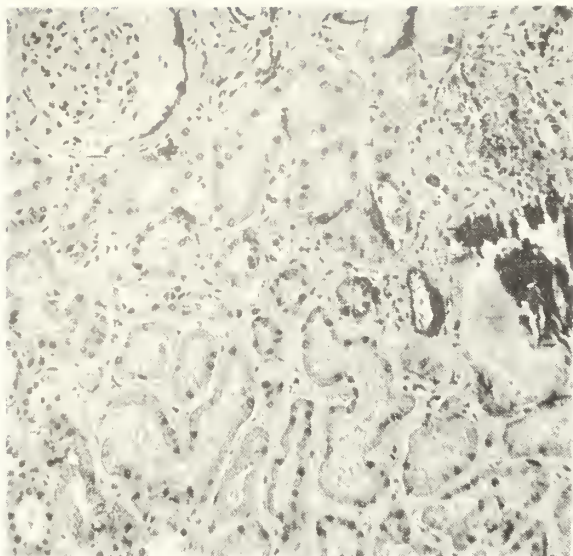


FIG. 1-B. Kidney. Calcium is deposited around a glomerulus, small arteries, and within and surrounding tubules. (X105.)

granular and eosinophilic as one would expect in the oxyphil type. Thus, this has been called a chief cell adenoma. The other type beside the oxyphil adenoma is one composed of the large clear cells that occur in the parathyroid glands, the so-called "Wasserhelle" type of adenoma. The chief cell type is the most common of these parathyroid adenomas. Actually the classification of parathyroid adenomas is of little value other than academically because no one has demonstrated differences in function of the various types or a difference in prognosis, and in any of the adenomas you may see a transition between the various types of cells. Many pathologists feel that the three cell types in the parathyroid are merely transitions one from another. Deposits of calcium are striking throughout the section of the adenoma.

The remaining photomicrographs show what happens when calcium metabolism is disturbed as it was in this patient. These manifestations, with the exception of the bone lesion, are examples of what has been called metastatic calcinosis and are calcium deposits in various tissues of the body. Figure 1-B is of the kidney and demonstrates calcium deposited around the glomerular tufts which is not, however, the characteristic location for these deposits in the kidney. Calcium is also present surrounding

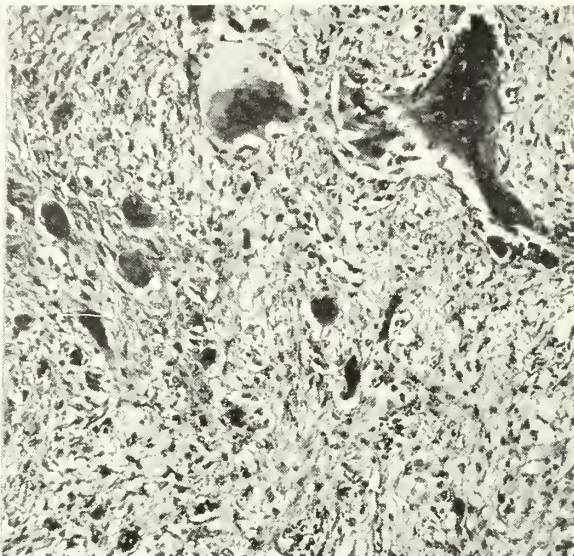


FIG. 2-B. Parietal bone. Generalized osteitis fibrosa cystica, characterized by fibrous tissue containing scattered osteoclasts replacing the normal bony architecture and marrow elements. (X105.)

the tubules and the blood vessels. The peritubular and perivascular areas are the most characteristic places for calcium deposition in the kidney.

The next photomicrograph (Fig. 2-A) is of the heart and represents a rather unusual manifestation of metastatic calcinosis. Here, rather than a perivascular involvement as is the classical example, we have calcium deposited actually within the myofibrils of the heart which is represented by discoloration of the myofibrils. The transition to apparently normal cardiac muscle may be seen in this section. Whether this represents the etiology or basis of the left heart failure, which we believe as Dr. Lipscomb does, was the cause of death in this case, is difficult to determine. Certainly cardiac function was disturbed by this calcification of the myocardium.

The next photomicrograph (Fig. 2-B) is of parietal bone and is representative of other bone studied. This represents probably the most classical and sought after change that occurs in hyperparathyroidism. It is well to point here that this change is really a late manifestation of hyperparathyroidism. This osseous lesion is present in only about 50 per cent of the cases of hyperparathyroidism depending, of course, upon the chronicity of the disease. The most common findings which lead to a diagnosis

of hyperparathyroidism are the result of some renal abnormality, primarily calculi within the urinary tract. It is said that 5 to 10 per cent of the renal calculi are caused by hyperparathyroidism. This bone lesion that is called generalized osteitis fibrosa cystica was first described in 1891 by von Recklinghausen. Its relationship to parathyroid disease was not recognized. It was first suggested in the early part of the 20th century that parathyroid disease could cause this type of bone involvement. This is a fairly characteristic picture that is rarely confused with other bone lesions; however, certain differential problems may arise in the pathological diagnosis. One of the differential problems is that of the so-called brown tumor or giant cell tumor of bone. If an area such as that in the lower left portion of the photomicrograph were seen alone, it would be an extremely difficult problem, but when there are bony trabeculae as in the upper right with osteoclastic activity along the lower margin and some osteoblastic activity along the right side, then this consideration is excluded as a differential problem. The giant cells scattered throughout are all osteoclasts. The single cells lining the bony trabeculae are osteoblasts. The mechanisms of formation of the osteoclasts is difficult to ascertain. Some writers believe they represent foreign body giant cells which are reacting to the bone matrix that has been left following the resorption of calcium. Others have felt that they represented fusion of the osteoblasts.

The question of whether osteomalacia is associated with primary hyperparathyroidism should also be considered. Osteomalacia is actually just the deposition of the bone matrix without ensuing calcification. Some writers believe that osteomalacia occurs in the secondary types of hyperparathyroidism but not in the primary types. Certainly there is no evidence of osteomalacia occurring here. The text on parathyroid disease and bone metabolism by Albright and Reifstein describes the lesions of secondary and primary hyperparathyroidism in bone as being entirely similar. We believe that there is a difference between the primary and secondary types and

that this difference is characterized in the secondary type by an osteomalacia of bone.

The question of the cystic change in bone associated with this condition is also somewhat confusing. Some feel that cysts are really a misnomer, yet, they are described classically. Certainly cyst-like areas are present in roentgenograms occasionally but may well represent fibrous tissue that has replaced the bone in circumscribed areas.

The mechanism of resolution of bone and its relationship to the osteoclasts poses still another difficult problem. Whether bony resolution takes place by activity of these osteoclasts per se following a stimulus from the parathyroid glands or whether it takes place because of electrolyte changes in body fluids and then the osteoclasts respond secondarily to the debris is the problem. Decalcification of bone certainly takes place, but it should be realized that only a relatively small portion of the calcium is actually available for absorption and that the remainder of the calcium is bound by the complex protein molecules that make up the bone. The remainder of the calcium is deposited or crystallized on top of this protein complex and is the portion that is concerned with homeostatic exchange.

Within the lungs in this case there was definite calcification of the alveolar septa. There was also a fairly marked pulmonary edema and congestion. This, in our opinion, represents the manifestation of left heart failure from which we believe this patient died.

As was pointed out previously, there are several different viewpoints concerning how and where the parathyroid hormone actually acts. Whether it affects the tubules or whether it acts primarily upon bone seems to be the question. According to Albright and Reifstein, upon removal of the parathyroid hormone the changes that are manifest are four in number and occur in a fairly specific order. The *first* change is that of a decrease of phosphorus in the urine. The *second* is an elevation of the serum phosphorus level. The *third* is that serum calcium falls and, *finally*, that there is a decreased calcium in the urine. When an excess of the parathyroid hormone is given, these changes take place in the same order

but in the reverse direction. We mentioned before the question of how bone is resorbed. The two theories are one, that primary bone changes occur that result in the changes of phosphorus and calcium in the serum and urine; the other is that the changes in the body electrolytes result in the decalcification of bone.

The areas where calcium is deposited are of interest. The deposition of calcium has been classically described as occurring in areas where there is a change in pH. These areas are primarily in the lungs, kidneys and stomach. Just why the calcification occurred in the myofibrils in this case and the mechanism of it, is difficult to explain. Certainly, we would expect it around the vascular system primarily for there is a change in pH in that area.

In conclusion, our diagnosis of the case is that of a parathyroid adenoma of the chief cell type that has resulted in metastatic calcinosis as manifest in the myocardium, in the lungs which also show pulmonary edema and congestion, in the kidneys, and stomach. The other change resulting from the parathyroid adenoma is that of the generalized osteitis fibrosa cystica.

Pathological Diagnosis: Parathyroid adenoma, chief cell type, resulting in metastatic calcinosis involving the lungs with pulmonary edema, stomach, kidney and myocardium and generalized osteitis fibrosa cystica.

Are there any questions concerning the case?

DR. CALLISON: Can you recall what the coronary vessels looked like?

DR. WILLIAMS: Yes, there was a very minimal amount of atherosclerosis either in the coronary vessels or in the aorta.

DR. DOUGLAS H. SPRUNT: Dr. Williams, I take it that you think the death in this individual was due to the damage to the myofibrils of the heart resulting in heart failure and then pulmonary edema. From the description of the lungs there is a considerable amount of pulmonary edema. Have you thought of the possibility that this edema might have occurred from some other cause? I don't know what, but there is a general upset of the metabolic processes in these cases. I've seen quite a number of

autopsies with much more calcification of the heart than this. I was wondering if you had speculated on the possibility that the pulmonary edema could have been due to something else. Also, was there an associated pneumonia in this pulmonary edema?

DR. WILLIAMS: We have done considerable speculating in this case. We considered the possibility of a hypoproteinemia. There is no evidence clinically of this, that is, there is no evidence of a generalized edema. The only cause that we could attribute a pulmonary edema to without a generalized edema was left heart failure. There was no associated pneumonia.

DR. SPRUNT: Dr. Lipscomb, what could have been done to keep this patient alive a little longer?

DR. LIPSCOMB: I think making the diagnosis six months ago would have been the best way of keeping him alive longer.

DR. SPRUNT: How long ago or how much of a lee-way did we have to establish this diagnosis? I know you can't answer this directly but I'm interested in, and believe it is important that we attempt to determine in all cases why death occurs at a particular time. Why or what was the big factor in terminating life in this individual in your estimation?

DR. LIPSCOMB: I believe that this man had a remarkably elevated serum calcium at the time of his death. In other words, I reasoned a little bit differently from Dr. Williams primarily because a similar case to this man's was presented in 1923² (and also more recently^{3,4,5}), I don't recall by whom, of abrupt onset, a short period of hospitalization, abrupt onset of cardiac failure and death, in whom an extremely high calcium level was found. It's too bad we didn't have chemical studies on this individual to substantiate or disprove the concept that the chemical imbalance was really the cause of death. These occurrences are loosely referred to in the literature as chemical death. We know that calcium has a profound effect on muscle tissue in general. We see exactly the opposite situation here that one sees in tetany. In tetany one has hyperexcitability of muscle fibers, and in hyperparathyroidism we have hypoeccitability of nerve-muscle tissue generally

and in cardiac musculature the EKG records a short Q-T interval, and logically this was the cause of the heart failure and death. I believe that, had we had chemical studies, hypercalcemia would have been implicated at least as contributing to and probably as the direct cause of death. On the other hand, I wouldn't disagree vehemently with Dr. Williams; we have no way of knowing whether the metastatic calcification in the myocardium was one of the precipitating factors. However, one would hesitate, in my opinion, to feel that that was the immediate cause of death because certainly calcium deposition didn't occur abruptly but was laid down gradually. No, I think the cause of death was the extreme degree of hypercalcemia.

DR. CALLISON: Dr. Lipscomb, will you explain why such patients have digestive symptoms?

DR. LIPSCOMB: I don't know the reason for the gastro-intestinal symptoms that occur with hypercalcemia. We do know that the occurrence of such symptoms is not unique in hyperparathyroidism; they occur in other conditions where hypercalcemia exists, so apparently they are a direct effect of the altered electrolyte on bodily economy and may be related to effects of decreasing smooth muscle tone of the intestinal tract.

DR. SPRUNT: If you had made this diagnosis a week before death what could have been done at that time?

DR. LIPSCOMB: I think that this individual might have responded, even at the time he last entered the hospital, to injections of isotonic sodium chloride and a low calcium diet which has been suggested as a therapeutic possibility. Of course, it depends on how far this thing had gone, but I certainly think removal of the parathyroid adenoma, even up to a week before his death, might well have prevented death. Relatively recently a chelating substance, EDCA (ethylene diamine tetra-acetic acid) has been described in the basic science literature, but has not been reported widely in clinical journals, which was indicated and of specific benefit here. This material, when injected intravenously, has the property of altering ionized calcium, and binding it in an inactive, non-ionized form for a

period of several hours. With this chemical, for example, one might lower a serum calcium of 20 mg./100 ml. to levels commonly seen in tetany for a period of a few hours. Had the diagnosis been suspected and this material been used in the receiving ward, the myocardial failure might have been prevented and appropriate surgery carried out.

I should like to add at this point that I have wondered often, if 5 per cent of the renal calculi in Boston were due to hyperparathyroidism, why 5 per cent of renal calculi in Memphis were not due to hyperparathyroidism? I don't know whether that is the result of not looking for over-functioning parathyroid glands or not recognizing them. Certainly the urologists and the internists are entirely familiar with this diagnosis and most of them at least give lip service to the fact that they look for it unsuccessfully on repeated occasions. I think perhaps one point that isn't generally appreciated and should be emphasized is that hypophosphatemia is a more reliable, earlier and perhaps more diagnostic point in making this diagnosis than is hypercalcemia. For instance, we don't have to have remarkably high levels of calcium to make a diagnosis of hyperparathyroidism, but it should be considered in high normal, serum calciums coupled with low serum phosphorus values. The first thing you look for and find is the low serum phosphorus.

Incidentally, and I think this is the point I started to make a moment ago, in patients who have kidney stones you usually don't see diffuse nephrocalcinosis (or deposition of calcium in the renal tubules) and, conversely, in patients who have nephrocalcinosis, you don't often see kidney stones. It would have been interesting here to have had an X-ray film of the kidneys which might have provided a clue to the examining physicians to look for hyperparathyroidism. The nephrocalcinosis is seen on X-ray as mottled, fine calcification in the renal areas and such a finding certainly would have suggested this possibility.

Another point that comes to my mind which should be made is that whenever one orders serum calcium and phosphorus studies, he should request also, at the same, a determination of protein. The form of cal-

cium present in serum in which one is interested is ionized calcium; an elevated calcium may be present with hyperproteinemia which does not mean that a high ionized calcium exists. In tetany and in hyperparathyroidism the calcium fraction which is significant is the ionized calcium which is low in hypoparathyroidism and elevated in hyperparathyroidism.

DR. SCOTT W. GILMER: It seems important to point out that like diseases of the adrenal and pituitary, hyperparathyroidism is not a static disease but is cyclic, fluctuating in its severity, dependent upon many factors. For example, the condition has been reported as existing in aviators in a latent or "subclinical" form becoming manifest only during high altitude flights. Consequently, it is clear that the symptomatology is of great importance in leading one to suspect the presence of hyperparathyroidism in the absence of positive physical findings as is illustrated in this case.

DR. CYRUS C. ERICKSON: I wonder if Dr. Lipscomb or Dr. Brinkley would comment further on the X-rays on which you have placed a great deal of importance in your differential diagnosis, especially with regard to the differential diagnosis between generalized osteitis fibrosa cystica and Paget's disease.

DR. LIPSCOMB: Paget's disease is a localized bone disease. It may be monostatic (involving only one bone) or it may be polyostotic (involving several bones); but it is not a generalized disease of bone in contrast to hyperparathyroidism which is. In other words, hyperparathyroidism is due to an excess of hormone and hormones don't stop in the mid-line. Albright, who is certainly the authority on this condition, emphasizes that point. One of the differential points he stresses is that in hyperparathyroidism when the bones are involved, all parts of the skeleton are attacked, but they need not necessarily be involved at all. That's another important point to recognize. When generalized involvement occurs, it can be

demonstrated by multiple X-ray views of different bones as well as by the finding of an absent lamina dura and an elevated alkaline serum phosphatase. I'm sure Dr. Brinkley can elaborate on some of the X-ray changes one sees in Paget's disease. Clinically in the first place this patient is not in the proper age group for Paget's disease. Paget's disease is a disease of older people and it is a disease that is characterized by overgrowth of bone. Historically, the classic question which is asked the patient is whether his hat size has increased to determine whether the diameter of the skull has enlarged. The roentgen finding in the skull here is somewhat suggestive of Paget's disease, but I am not enough of a radiologist to be able to outline sharply the differences between the two entities and Dr. Brinkley can probably tell you more about it than I can.

DR. CALLISON: Dr. Brinkley, would you like to elaborate on that?

DR. BRINKLEY: I can't add much to what Dr. Lipscomb said. The change in Paget's is chiefly bony overgrowth and thickening of bone; here we do not see primarily overgrowth. We see just the opposite, demineralization throughout the bones of the body. Another thing is that the lamina dura is absent here, while the lamina dura is present in Paget's disease. That is an important differential point.

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The President's Page

OUR OBJECTIVES



DR. PATTERSON

Now that the new year is getting well under way, it might be well for us to bring ourselves up to date on a few of our objectives. No better starting place could be found than the little red brochure entitled "The Tennessee Ten." To

quote from page 3, "Your Committee sets forth these objectives so that you will have them before you constantly. You are urged to check and re-check them, as we go along, to determine if they are being pushed or if some of them are being neglected in your area of medical care." We therefore urge all our members to get out the little red book and read it again carefully. The program therein is broad, comprehensive, and far-reaching. The ten goals cannot be reached all at once. Perhaps some of them can never be reached, for they are idealistic in nature and should serve only as lodestars to direct us in our course.

Since all these objectives have to do with rendering better medical service to our people, and since "The Tennessee Ten" is a plan to assist us in coordinating our efforts and arousing in each member certain interests that may appeal to his talents, the work has to be divided among many groups. At one time, one objective will be stressed; at another time, another will receive emphasis. Taken as a whole, the over-all program is being pushed forward.

Before this plan was instituted, however, our postgraduate courses were put into effect. To give better medical service, we must first be better doctors; and to do this, we must keep ourselves informed. The present course in obstetrics has now been completed in the first circuit. We are informed that the course was well received and that the attendance was above average. The Committee on Postgraduate Instruction has done a vast amount of work. An able

instructor, Dr. Charles A. Behney, is giving the course. (See page 351 of the September JOURNAL.) Since this course is brought to the doctor, and since the expense is partially borne by grants, let us look forward to giving it our active and enthusiastic support. Whether the individual member does obstetrics or not, much will be given in the course that will be basic and therefore of universal interest. Then, too, it is postgraduate education, and let us all support it.

Next to making ourselves better doctors, we should broaden the availability of medical care. This has to do especially with efforts to counteract the unequal distribution of doctors and facilities, and to giving constructive thought and work toward aiding certain communities in obtaining better medical care. This in itself is such a serious problem as well as one of such magnitude, that our profession alone cannot accomplish much. We can, however, lead the way, and our public expects us to do this. All elements of our society, including our educational institutions, our Public Health Department, our civic organizations, our philanthropic agencies, and our profession must unite their efforts and means and set proper forces into action towards this end.

The Tennessee Medical Foundation has been set up for this purpose. At the risk of repetition of a previous page, let us recall that this foundation was incorporated July 10, 1952, in accordance with an action by our House of Delegates. This is, therefore, separate from our State Medical Association and membership in the Tennessee Medical Foundation is not limited to members of our profession.

In the near future you will receive more complete information about the purposes and workings of this Foundation, and we urge you to study this carefully. We hope that our members will join and support it actively. Furthermore, when others outside our profession are invited to join, and when we are asked to advise them and to explain what it is about, let us be in position to give them this information. It will

require funds to carry on its work. Already a grant of twenty-thousand dollars has been obtained. Mr. Clifford Seeber, the field secretary, has been hard at work, and a good start has been made. The opportunities are great, and now we feel that a membership drive should be started. Let us get behind this and make a real contribution toward attaining one of our important goals.

So please get out the little red book, "The

Tennessee Ten," and read it again. Then let us become active and give more and more support to our Public Service Program. Also let us be on the lookout for more information concerning the Tennessee Medical Foundation.

A. M. Patterson.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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FEBRUARY, 1954

EDITORIAL

THE DANGERS OF PENICILLIN THERAPY

A carefully written and documented article¹ has recently appeared which gives one pause, as one fills the syringe with penicillin, to ask "Are the indications clear-cut for its use in this case?" Kern and Wimberley point out that before the introduction of the sulfonamides, allergic reactions to drugs were relatively uncommon. Today, they state, penicillin heads the list in this respect, and has displaced sera as the commonest cause of death from anaphylactic shock.

Within the first few years after the introduction of penicillin there had been reported reactions such as urticaria, angio-edema erythema nodosum, serum sickness-like syndrome, shock, convulsions, psychotic depression, acute syncope, fever, exfoliative dermatitis, anaphylactic purpura and melena and toxic nephritis. There was much discussion relative to whether reactions were due to penicillin per se, impurities or the vehicle

used in the depot penicillins. However, it became apparent that the reactions in the main were due to the penicillin since, through the incidence of reactions seemed to drop after new forms were introduced, they again appeared as patients became sensitized in later courses of re-treatment with penicillin. The authors remind us that time may show the same to be true of the preparations now alleged to have low antigenicity.

Only two deaths due to anaphylactic shock had occurred until recently. These were in 1946 and 1949. But the picture has changed. Beginning in March of 1952, and within the succeeding eighteen months, there were reported sixteen deaths from anaphylactic shock. One cannot help but wonder how many more than these sixteen deaths have occurred, since only a minority of the serious reactions to drugs will by their very nature be reported. For each death it is almost certain there were numbers of instances of anaphylactic shock wherein the patient was saved from death by prompt treatment.

Another serious and fatal type of sensitization is probable and whose incidence is difficult of determination as yet. This is diffuse arteritis whether under the name of disseminated lupus erythematosus or periarteritis nodosa. Instances of each following penicillin reactions have been reported. The L.E. cell has been demonstrated accompanying severe cutaneous reactions to penicillin and thus may be taken as proof of tissue sensitization in this category of systemic disease. Your editor knows of one clear-cut instance of periarteritis nodosa with death following penicillin, and has been very suspicious of it as an etiologic factor in several other cases where it was used in treating established disease which by its nature was probably on the basis of tissue sensitivity. Furthermore, he has seen a remarkable dermatomyositis-like reaction to penicillin.

Kern and Wimberley go on to emphasize the factors which favor penicillin sensitivity. Few reactions occur after the first dose, implying sensitization by previous therapy. They quote a report of seven years ago wherein it was shown that 1.8 per cent of 824 cases had urticaria during the first

¹Kern, R. A., and Wimberley, N. A., Jr.: Penicillin Reactions: Their Nature, Growing Importance, Recognition, Management and Prevention, Am. J. Med. Sc. 226:357, 1953.

course of penicillin therapy and 6 per cent of 200 cases reacted during a second course. The allergic constitution is recognized to be of importance, and the authors point out that on the basis of such persons in the population, one of every seven patients is a potential candidate for the development of sensitivity. Parenteral preparations and especially the depot types are more sensitizing than the oral ones. On the other hand troches and lozenges may cause local reactions. Established sensitivity to other fungi may be a factor in penicillin sensitivity.

The authors then discuss the use of skin tests to determine the presence or absence of sensitivity to penicillin,—using a scratch test before resorting to intradermal testing. Consideration is also given to the treatment of reactions not only of anaphylactic shock and other severe reactions but also the lesser ones.

Under prevention a plea is made to avoid the needless use of this potent drug in conditions wherein there are no indications for its use. The notorious injection of penicillin for the viral infection of the common cold is the best case in point. Here of course it is entirely useless, and in speaking of its use for the cold the authors say the doctor “must learn that it is folly to shoot sparrows with a 16-inch gun.”

An interesting study of the frequency of the use of penicillin and its ill-advised administration for colds was carried out by Jambolsky² in San Francisco. He called 100 lay persons (Group 1) and 100 doctors (Group 2), each group selected at random from the telephone directory. Two other groups of 100 each were consecutive new patients (Group 3) admitted to Stanford University Hospital, and to the Pediatric Out-Patient Clinic (Group 4) of the same hospital. Of each 100 in the four groups, penicillin had been received by 49, 62, 43 and 65 respectively. Colds had been the *excuse* for injections in 22, 25, 16 and 16 respectively. Thus we see that physicians *in treating colds* had been at least as thoughtless in gambling with their own health as with that of their patients. Rashes follow-

ing the use of penicillin were reported as 12, 7, 16 and 4 in the four groups respectively,—incidences varying from 6 per cent in the children to 11 per cent in physicians and 24 per cent in the lay group.

With this potent therapeutic tool the doctor must weigh certain questions as he employs it. Are the indications clear-cut for its use? In other words, is the risk of sensitization of the patient worth it under given circumstances? If the patient had had penicillin previously, is he sensitized now, and what may happen if such is the case?

R. H. K.



GRADUATE EDUCATION OF THE FUTURE

In predicting the “Practice of Medicine in the Future”^{*} your editor anticipates a change in the pattern of medical practice which not only will affect the physician in his activities, but may well have a profound effect upon the training of the graduate of medicine in the future.

Most of the specialists of middle age or of younger years, and even some of the older group, received their graduate training, or at least much of it, on the public wards or some variation of this in charitable hospitals or in “teaching” hospitals. Such a system permits a graded responsibility to the young graduate from his intern year, through the residency, until he is ready to assume the responsibility of private patients in his special field.

Already trends affecting graduate training are becoming obvious in many of the university and “teaching” hospitals. The cost of ward beds has risen so sharply that endowment no longer can provide the income to maintain a patient on a teaching ward at a cost of around twenty dollars a day. Furthermore, in returning to the editorial anticipating changes in medical practice, it was pointed out that the time would come when health insurance would probably cover practically all the employed, whether in industrial, agricultural or white collar pursuits. In the past, and to a lesser extent at the present time, many of these persons have

²Jampolsky, G. G.: Attitudes Toward Specific Therapies, California Med. 79:28, 1953.

^{*}Editorial. “Practice of Medicine in the Future,” J. Tennessee M. A. 47:31, 1954.

quickly slipped into the medically indigent group when faced with catastrophic illness in themselves or in their families. As a result the ill of this economic level filled many of the beds of the public wards. Health and hospitalization insurance offer protection against the need for care on the public wards and assure the services of a private physician. The effect of the insurance program has already been felt in many teaching hospitals as well as in charitable or public hospitals. The low occupancy rate in some of the nation's public hospitals has been of such level that it seems unsound financially to continue to maintain them. If this is true in 1954, what will be the results when the full impact of universal health and hospital insurance for the employed is felt!

It appears highly probable, therefore, that graduate training for specialty practice will be sharply curtailed in terms of available ward patient material. There will remain only those who are truly indigent (without benefit of insurance) and the patients in the hospitals of the Veterans Administration as available material for graduate education. And even the indigent patients may not be concentrated in the larger hospitals where training is provided. For instance, in Tennessee the bill for the hospitalization of the indigent will keep many patients in their home or community hospital instead of being moved to a medical center.

One may visualize then, in a decade hence, little clinical material outside of the private patient group for graduate training. The only corollary is that the private patient must be used in graduate education. This will be reminiscent of the apprenticeships or preceptorships of past days which were effective in many instances. Some of our best teachers were well trained under such a system.

The modern version of an apprenticeship dealing with private patients is not new. It is in effect in most private hospitals offering graduate training. It differs from the apprenticeship of former days in that there are numerous preceptors instead of one, providing varied and contrasting experiences to the house-officer.

The burden of training many of the next generation of specialists will fall therefore

upon the shoulders of the doctor who is caring for private patients in the hospital, rather than upon the attending man in the "teaching" or public hospital. The responsibilities entailed in this function of the medical profession have never been outlined more clearly and concisely than in the article following this editorial. (It should be read and re-read by every doctor practicing in a hospital in which a house staff is receiving graduate training.) It certainly is far from proven that the intern or assistant resident would suffer from this type of relationship with the visiting man if his attitude is *right*. The immature and inexperienced recent graduate may profit much by observing the experienced clinician in the management of his private patient. Such an experience may hasten the development of the basic pattern of conduct and attitudes of the proven clinician, which we have observed to be delayed for years in some young men after they have graduated from resident training into practice.

Admittedly, even under the most ideal use of private patients for graduate training, the *senior* residents' training will suffer. Only a year or two of the responsibility of a public ward can provide the self-dependence and maturity needed to practice the chosen specialty. But since this experience is needed only for the senior resident the number of staff beds required may be quite limited. One authority on the training of house officers in the field of medicine feels that a minimum of one public to seven private beds will furnish an adequate supply of clinical material for the graduate education of the senior resident.

Therefore with the changes which will take place in the practice of medicine in coming years, providing a preponderance of private patients, there will need be a re-orientation of thinking in graduate training. Much of the responsibility of training the next generation of specialists will fall upon the shoulders of the physician and surgeon in private practice who will need to teach the fledgling on his private patients. This will be a serious responsibility which the practitioner will find it difficult to escape.

R. H. K.

Special Article

The staff-member of every hospital, whether private or otherwise, which supports a training program for interns and residents finds himself in the role of preceptor and teacher. With a steadily decreasing number of charity patients the role of the private practitioner as a teacher in graduate training is becoming of greater importance from year to year. This article defines so well the duties of the attending man in the role of preceptor, and in addition interprets the benefits which redound to the doctor who teaches and to the hospital which fosters the teaching atmosphere.

—Editor.

Graduate Medical Education in Nashville

Charles C. Trabue IV, M.D., Nashville, Tenn.

I would seek the gift of your attention for a few minutes while we consider the subject of Graduate Medical Education in Nashville. Graduate Education is that formal training which is offered to a doctor after he has obtained his medical degree. It is the training obtained by internes and residents and is to be distinguished from postgraduate education, which refers to a program of teaching to maintain the practitioner at a suitable level of professional fitness. Undergraduate education, of course, is carried out by our Medical Schools. Postgraduate education is largely the work of our various medical societies. Graduate education in medicine, on the other hand, is the responsibility of the hospitals, which is to say that it is the responsibility of the staff members of our hospitals.

Let us examine, for a moment, this responsibility. Is it proper to assume that the responsibility for the training of our residents and internes is placed on the shoulders of a small group of men in each hospital, the Interns or Education Committees, the Chiefs of Service, the Professors? To make such an assumption would be to take a very narrow view and would deny to these young men a large share of the teaching resources of our medical community. It is true that each hospital has a small group of doctors who have the responsibility of recruitment or selection of house officers;

assignment of duties; liaison between the visiting staff, the house staff and the hospital administration; the organization of the more formal lectures, clinics and ward rounds, and the supervision of the work of the house officers in general. But the opportunity for teaching and the responsibility for it, belongs to each one of us who has even one private patient in any of these hospitals.

If we are to bring ourselves up to date we must completely discard the concept that house officers must learn to be doctors by taking care of charity patients. The charity patient still has a role in the training program but today the private patient is relatively far more important. This change has necessarily developed because of three principal facts: there are more medical graduates today and each one needs more graduate training, and there are fewer charity patients available. Medical school enrollment in the U. S. increased over 26 per cent in the eleven years from 1941 to 1952. The percentage of increase in house officers has been even greater because the sum total of knowledge required to become an average doctor is greater every year. In 1950 the number of internes and residents on duty in American hospitals was almost three times as great as in 1940. In 1939, Dr. Sidney Burwell, in an address to the American College of Physicians, stated that the training in Medical School was becoming, on the whole, less vocational and more basic and he predicted that the change would probably go further. "Even now," said Dr. Burwell 15 years ago, "Medical schools do not, in general, prepare their students to practice medicine to the same degree that they did 20 years ago." "They do pretty well," he said, "if they supply a foundation on which subsequent vocational training and experience may be firmly based." Today there are only four medical schools that require a year of internship before granting the M.D. degree but there are 26 states that require a year of internship before granting a license to practice. These factors plus the ever higher requirements of the various specialty Boards result in more men taking more years of graduate training each year. And there are considerably less charity patients for these

men to study today for several reasons. First, the general prosperity of the times makes it possible for more people to pay for private service. Second, voluntary medical and hospital insurance allows many to enjoy private service who would otherwise be medically indigent.

There are today more house officers and fewer charity patients in almost every community of our country and Nashville is certainly no exception. At Vanderbilt, twenty years ago, there was a total of 38 doctors on the house staff. Today there are 73 men on that staff. And yet the number of charity patients at Vanderbilt today is only half of the number twenty years ago. Exactly the same changes have occurred at the Nashville General Hospital, with a house staff almost four times as large today as in 1933. Twenty years ago St. Thomas and Protestant Hospitals had a combined total of not more than ten house doctors. Today the total of St. Thomas and Baptist Hospitals is more than forty. At these four Nashville hospitals, then, we have a total of three times as many house officers and they have probably less than half as many charity patients as twenty years ago. The situation at Thayer Veterans Hospital is an exception to the statement concerning less charity patients but it does illustrate very well the increased number of men seeking graduate training in Nashville.

Thus it becomes obvious that while private patients played a minor role in the field of graduate education just twenty years ago, today their role is probably more important than that of the charity patient. The situation has the effect of placing on each one of us a part of the responsibility for training these young men while we take care of our private patients.

One of the problems met in this graduate training program is to engender in all of our staff physicians an understanding of, and an insight into, the nature of the program. First, the physician must have an understanding of the status of the intern and resident and he must have a sympathetic attitude concerning their aims. It must be remembered that each of these men has served as a clinical clerk for at least a year before graduation and therefore the

interne has emerged from the old status of being simply a medical chore boy. No hospital can any longer hope to succeed in either finding or keeping a house staff in return for the very doubtful privilege of allowing the house officers to perform only the menial tasks commonly known as scut work. Unfortunately there are still some medical staff members who feel that the interne should be available only to do the bidding of the visiting doctor, look after records and do the routine technical procedures of diagnosis and therapy. This attitude contributes to the development of a mutual disrespect and a hypercritical approach toward each other. It is true that the house officer must implicitly carry out all orders—the very nature of his job demands it—but this implies a very one-sided relationship unless the staff member gives something in return.

First of all, the house officer is a doctor and has spent four very arduous years in medical school. He is literally straining at the leash to exercise his hard won prerogatives and enter the actual practice of medicine. His high school and college classmates have long since entered into the business or professional world and in many instances are now comfortably settled in a job with a home of their own. But Medicine is not like any other business or profession! Medicine is a taskmaster so stern that the graduate from medical school, already a man in his middle or late twenties, still does not consider himself prepared to begin his practice. He is already a doctor, who, in many states, is legally qualified to practice and yet he has chosen to spend another one to five years in training. He makes this choice because he realizes the tremendous difference between being just the owner of a diploma and being a doctor who is adequately qualified to make difficult decisions met in practice and take the full responsibility of those decisions. He realizes the wisdom of an interim training period in which he takes progressively more responsibility under the supervision of his elders.

And so with his diploma in his hand, our young doctor enters into a contract with the hospital of his choice. What is the nature of this contract? The graduate nurse, with

much less education, earns several times as much money per hour for her efforts. In many hospitals the orderly earns more in a week than the interne earns in a month. But there is a part of the interne's contract that does not meet the eye. It is unwritten but it is nonetheless important. It is an agreement on the part of the hospital which says in effect, "We do not pretend that we are paying you a salary which is commensurate with your ability and your hours of work. We will pay you a stipend which will help with the bare necessities of life. But the principal remuneration will be the opportunity we offer you to work hand in glove with the members of our staff as they go about their daily practice of medicine in our hospital. This experience, if you take advantage of it, will change you from a young man with a diploma into a man who is truly prepared and competent to practice Medicine." This is essentially what the hospital promises and, insofar as it can, it carries out the contract by arranging various lectures, rounds and conferences. But of course these features, as valuable as they may be, are not much more than a review of the work he has had in medical school. The true value of this year's work will be gained by his experience with patients and his contacts with members of the staff.

Now having examined the status of the house officer, what is our decision? Shall we be indifferent of his work and progress, or would it become us more to be interested teachers and take the role of preceptors? There are one hundred and seventy-five house officers in Nashville—almost as many as there are students in Vanderbilt University School of Medicine. Should we not pay more attention to the hospital as a graduate school? And should we not remember the traditional responsibility of the physician to teach? It is fitting that we recall the first part of the Oath of Hippocrates, and I will quote it as a reminder: "I swear by Apollo, the physician and Aesculapius, and Health, and All-Heal, and all the gods and goddesses, that according to my ability and judgment, I will keep this oath and this stipulation—to reckon him who taught me this Art equally dear to me as my parents, to share my substance with him, and relieve his necessi-

ties if required; to look upon his offspring in the same footing as my brothers, and to teach them this Art, if they shall wish to learn it, without fee or stipulation; and that by precept, lecture and every other mode of instruction, I will impart a knowledge of the Art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine." If this oath were written today the language would be different but the philosophy would be the same. And I take this philosophy to mean that because of our indebtedness to those men who taught us, we are obligated to pass on our knowledge and experience to the next generation of men who have taken the oath to study medicine.

It is also important to realize that a good program of graduate education will of necessity result in a high level of postgraduate education for all those physicians who participate in the program. For obviously the master cannot teach the pupil beyond the bounds of his own knowledge and teaching will certainly stimulate his own thirst for knowledge. Men learn while they teach. Furthermore the standards of practice within a given hospital are improved in direct proportion to the increase of interest in the teaching program by the visiting physicians of that hospital. The informal discussion of a case with an intelligent house officer is much like a consultation and may well serve to clarify a difficult problem in diagnosis or treatment. Hospital records show many instances in which the recorded observations and original opinions of the house officer were of the greatest value in the solution of a clinical problem. And certainly the physician who plans to discuss his patient with the house officer is much less likely to be guilty of careless thinking or ill considered action than is the physician who has no contact with house officers.

And so we come to the final point of this discussion and that is, the relationship between a good house staff and a good hospital. This relationship is in every sense bilateral. It is not possible to maintain a good house staff year after year unless we have a good hospital—nor is it possible to maintain a really top flight hospital without the help of a good house staff. And by the same

token, just as rapidly as a hospital improves the quality of its house staff, with just that same rapidity does that hospital become a place in which it is easier for men to do better work, and much more difficult for any man to get by with careless or even unethical work. Because of these facts, the competition between hospitals for the procurement of internes is greater today than ever before. The hospitals of our community will easily overcome this competition if our doctors will each consider that he has a teaching responsibility at the hospitals in which he works.

Perhaps at this point I can read the minds of some of you who are recalling how unavailable some of these house officers seem to be, and also how unreceptive, at times, to our words of wisdom. I will pass quickly away from this subject by simply stating that it is not in the purview of this discussion to debate the shortcomings of house officers. I might add that the charitable view for mature men such as we are would be to recall the days of our own internships. Were we always avid to pick up every pearl of wisdom dropped by our seniors? If not, we are all the more grateful today that some of these seniors took the pains to hammer a few pearls into our heads.

Finally, it is not for me to even suggest how we shall individually accomplish our jobs of teaching. If we simply see the opportunity, and accept the challenge, then the individual approach to the problem will be of secondary importance.

May I simply say in conclusion that each of us has a wonderful opportunity to be of service to the younger generation of doctors and in so doing to serve ourselves by raising our own standards of knowledge and of practice. The theme of my remarks may be summed up by recalling to you that the word doctor is derived from the Latin verb "doceo" meaning "I teach."

DEATHS

Dr. Neumon Taylor, Memphis, died January 9, 1954, after an illness of several months. He was one of the founders and

organizers of the Memphis-Shelby County Medical Society. Aged 78.

★

Dr. Eugene Eaton McKenzie, Memphis surgeon and president of the Methodist Hospital medical staff, died January 17, 1954, at his home of a heart attack. Aged 52.

★

Dr. Frank C. Outlaw, Dotsonville, died December 23, 1953, at his home following a long illness. He and his father, Dr. J. F. Outlaw, together practiced medicine in their community for a total of 100 years. Aged 91.

★

Dr. A. A. Oliver, Paris, died January 11, 1954, in a Nashville hospital following an illness of several years. Aged 70.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis and Shelby County Medical Society

At its meeting of November 3, the Society heard a Symposium on Vaginal Cytology Survey. The speakers were: Dr. Douglas H. Sprunt who discussed "The Memphis and Shelby County Cancer Survey Project—Aims and Objectives"; Dr. C. C. Erickson spoke on "The Cytology Technique in Cancer Detection and Progress in Memphis and Shelby County Cancer Survey Project—The First 40,000 Women"; and Dr. Phil C. Schreier presented a paper on "The Clinical Management and Treatment of Intraepithelial Carcinoma and Early Uterine Cancer."

Knoxville Academy of Medicine

The meeting of January 19 was devoted to the installation of officers and the President's Address by Dr. S. J. Pratt whose subject was "The History of the Knoxville Academy of Medicine 1857-1910, Part I."

Nashville Academy of Medicine

The officers for 1954 were installed at a dinner meeting on January 12. They were Dr. R. N. Buchanan, president-elect; Dr. Oscar Noel, secretary-treasurer; and Dr. James Kirtley and Dr. W. O. Tirrill, members of the Board of Directors. Dr. C. C.

Trabue, IV, taking office as president, read a paper entitled "Graduate Education in Nashville."

Chattanooga-Hamilton County Medical Society

Dr. William E. Van Order was installed as the 71st president of the Society during its annual banquet on January 7. In his inaugural address, Dr. Van Order recommended that "qualified colored doctors of this section be invited to attend the Society's scientific sessions."

The guest speaker was Dr. W. W. Bauer, Director of the Bureau of Health Education of the American Medical Association.

Other officers installed were: Dr. Cecil Newell, president-elect, and Dr. Arch Bulard, re-elected secretary-treasurer.

Consolidated Medical Assembly

More than sixty physicians heard papers by three members of the University of Tennessee Medical School Staff at the January dinner session of the Assembly at the New Southern Hotel on January 5. Dr. James Hughes, associate professor of pediatrics, discussed "Acute Bronchiolitis in Infancy"; Dr. Charles Olim, associate professor of surgery, spoke on "Vascular Diseases and Accidents"; and Dr. Hugh Smith, associate professor of orthopedics, read a paper on "Medullary Fixation of the Femur."

Anderson-Campbell Medical Society

The Society held its annual meeting at the Russell Hotel in LaFollette on December 17 and elected officers for 1954. Chosen for president was Dr. S. G. McNeeley, Norris; for vice-presidents, Dr. J. W. Stone and Dr. Robert Brown; and Dr. R. C. Pryse, re-elected for secretary-treasurer.

NATIONAL NEWS

Administration Proposes U. S. Reinsurance Corporation; Would Underwrite Catastrophic Illness Coverage

The Eisenhower administration is prepared to ask Congress to establish a federal corporation

which would reinsure voluntary health insurance plans, making it possible for them to extend their coverage and protect against the cost of catastrophic illness. In some respects it would be similar to the Federal Deposit Insurance Corporation for bank deposits.

In his State of the Union Message delivered to Congress recently Mr. Eisenhower briefly sketched what he had in mind. Subsequent inquiries on Capitol Hill established the basic outline of the plan. The heart of the program would be a corporation set up with a federal appropriation for its original working capital. Once under way its operations would be supported by payments from the member health insurance organizations of a percentage of their gross income from premiums. The Eisenhower plan is understood to include the following three major objectives of the Wolverton bill:

1. Make it possible for health insurance plans to offer catastrophic or comprehensive coverage by having the federal corporation pay one-third or three-fourths of each survivor's claim in excess of \$500 or \$1,000.

2. Make it possible for—or even require—the plans to offer coverage to individual subscribers.

3. Require all participating plans to scale the cost of premiums in relation to family income. Families at the \$5,000 or \$6,000 level would pay the maximum, with those earning less paying less.

Other Points: Participating groups would pay about 2% of gross premiums collected to support federal corporation. . . . A limit would be placed on out-state subscribers. . . . Also a limit on over-the-schedule payments to physicians or hospitals. . . . Benefits would have to be clearly defined and meet standards set by the corporation. . . . Patients would have to be allowed free selection among participating hospitals and physicians. . . . Every licensed physician would be eligible to participate. . . . The Wolverton plan excludes commercial companies but the present administration program would admit them.

What the President Said on Medical, Health Issues

Following are excerpts from President Eisenhower's State of the Union message. They are points of interest to the medical profession.

Socialization of Medicine: "I am flatly opposed to the socialization of medicine. The great need . . . can best be met by the initiative of private plans. But it is unfortunately a fact that medical costs are rising and already impose severe hardships on many families. The federal government can do many things and still avoid the socialization of medicine."

Research: "The federal government should encourage medical research in its battle with such diseases as cancer and heart ailments, and should continue to help states in health and rehabilitation."

Hill-Burton Program: "The present . . . act

should be broadened to assist in the development of adequate facilities for the chronically ill . . . of diagnostic centers, rehabilitation facilities and nursing homes."

Reinsurance of Health Plans: "The war on disease . . . needs a better working relationship between government and private initiative. . . . A limited government reinsurance service would permit the private and non-profit insurance companies to offer broader protection to more of the many families which want and should have it."

Rehabilitation: "The program for rehabilitation of the disabled especially needs strengthening. . . . This program presently returns each year some 60,000 handicapped individuals to productive work. Far more disabled people can be saved each year . . . if this program is gradually increased."

Military Dependents: "Pay alone will not retain in the career service . . . the necessary numbers of long-term personnel. I strongly urge, therefore, a more generous use of other benefits important to service morale. Among these are more adequate living quarters, and medical care for dependents."

Medical Tax Deductions: ". . . we propose more liberal tax treatment for dependent children who work, for widows or widowers with dependent children, and for medical expenses."

Veterans: "The internal reorganization of the Veterans Administration is proceeding with my full approval. When completed, it will afford a single agency whose services, including medical facilities, will be better adapted to the needs of those 20 million veterans to whom the Nation owes so much." (There was no further reference to VA in the address.)

Social Security: "I ask that this extension (to 10,000,000 more persons) soon be accomplished. This and other major improvements . . . will bring substantial benefit increases and broaden the membership of the insurance system, thus diminishing the need for Federal grants-in-aid. . . ."—*(From the A.M.A. Washington Letter, January 8, 1954.)*

MEDICAL NEWS IN TENNESSEE

University of Tennessee College of Medicine

Dr. Louis F. Rittelmeyer, Jr., who formerly practiced medicine in Lucedale, Miss., has joined the staff of the University of Tennessee College of Medicine as assistant director of the general practice department.



The College of Medicine, in cooperation with the John Gaston Hospital and Le Bon-

heur Children's Hospital, will offer six post-graduate courses for Mid-South physicians during 1954. Courses and the dates they will be offered are: Pediatrics, March 10, 11 and 12; Abdominal Surgery, March 21, April 1 and 2; Obstetrics and Gynecology, May 19, 20, and 21; Trauma, July 28, 29 and 30; Management of Simple Fractures, September 15, 16 and 17; and Clinical Electrocardiography, October 6, 7 and 8. Further information may be obtained from the Postgraduate Department, 4 South Dunlap, Memphis, Tenn.



The Jackson Clinic

The Jackson Clinic of Jackson offered the following program on January 17th, presented by Dr. Howard K. Gray, Section of General Surgery, Mayo Clinic, and Dr. James C. Cain, Section of Internal Medicine, Mayo Clinic. They discussed "Diseases of the Liver and Biliary Tract" and "Diseases of the Upper Intestinal Tract." Luncheon was served at the Clinic between the morning and afternoon sessions.



State Finishes Four TB Hospitals

Dedication on February 28 of the last of Tennessee's four new TB hospitals will be another milestone in Tennessee's fight against tuberculosis—once a leading cause of death. With the opening of the 224-bed, \$4,300,000 hospital in East Nashville next month, Tennessee's total TB beds operated by the state will number 924. Other hospitals completed and in operation are at Chattanooga (120 beds), Memphis (400 beds), and Knoxville (180 beds).

The four hospitals were built at a total cost of \$11,500,000, of which the state furnished \$8,500,000 and the federal government \$5,000,000.

Tennessee State Orthopedic Society

The Society was recently chartered under the general welfare laws of Tennessee for the purpose of promoting education in the field of orthopedic surgery. Incorporators were Dr. Samuel B. Prevo, Dr. Eugene Regen, Dr. J. William Hillman, Dr. George K. Carpenter, and Dr. S. Benjamin Fowler, all of Nashville.

Hill-Burton Hospital Facilities

As of December 31, 1953, the status of all Hill-Burton hospital projects in Tennessee was as follows:

Completed and in Operation—37 projects, total cost \$27,908,164, federal contribution \$10,935,991, providing 1,856 beds.

Under Construction—20 projects, total cost \$23,636,064, federal contribution \$6,715,279, to supply 744 beds.

Approved—7 projects, total cost \$4,773,294, federal contribution \$2,431,463, to supply 342 additional beds.

Recent approvals are Clarksville, 36 additional beds, total cost \$250,000, federal share \$130,000; Oneida, 36 beds, total cost \$520,000, federal share \$270,400; Springfield, 53 beds, total cost \$772,654, federal share \$390,000.

Committee on Postgraduate Instruction

Postgraduate Course in Cancer

A postgraduate Cancer follow-up course will be offered to the physicians of East Tennessee during the week of March 1-5, 1954. The teaching centers for the course will be Johnson City, Oak Ridge, Cookeville, Murfreesboro, and Cleveland. Announcements concerning the course have been forwarded to all the physicians of East Tennessee by mail.

The faculty for the course will be Doctor Maus W. Stearns, Jr., of New York City, and Doctor Sam A. Wilkins, Jr., Emory University, Atlanta, Ga. This is the same faculty which conducted a course in West Tennessee during May, 1953.

The course is the fourth in a series which has been conducted in the state since 1947. The program is sponsored jointly by the Tennessee Division of the American Cancer Society and the Tennessee State Medical Association. Funds have been provided by the American Cancer Society and the Ten-

nessee Department of Health. The course is arranged by the State Committee on Cancer.

Lectures on Diagnosis and Treatment of Carcinoma of the Cervix Uteri, Cancer of the Colon, Carcinoma of the Fundus, and Cancer of the Rectum will be given.

Dr. Stearns is a graduate of the Albany Medical School in New York. He is now Assistant Attending Surgeon of the Rectal and Colon Service at the Memorial Hospital, Instructor in Surgery at Cornell Medical School, and Lecturer in Proctology at Polytechnic Medical School and Hospital. He is a Diplomate of the American Board of Surgery and a Fellow in the American College of Surgeons. Doctor Wilkins attended the Medical Schools of the University of North Carolina and Cornell and is now an Associate in the Department of Surgery at Emory University, Associate Director of the Department of Surgery at Winship Clinic and of Steiner Clinic of Grady Memorial Hospital. Dr. Wilkins is also a Fellow of the American College of Surgeons and a Diplomate of the American Board of Surgery.

If you plan to attend the course at any of the five teaching centers, please forward your registration card to the Clinic Chairman of the center, if you have not already done so.

Postgraduate Medical Study

The postgraduate course in Obstetrics by Doctor Charles A. Behney opened in the third circuit February 15, 1954. The following teaching centers and schedule for this Middle Tennessee area are announced:

The enrollment for the above named teaching centers is good, and the response and cooperation in organizing the course was excellent.

Teaching Center	Day	Lecture Hall	Time
Tullahoma	Monday, February 15	Tullahoma High School	7:00 P.M.
Murfreesboro	Tuesday, February 16	Rutherford Hospital	7:00 P.M.
Fayetteville	Wednesday, February 17	Lincoln County Hospital	7:00 P.M.
Winchester	Thursday, February 18	Basement Room, Residence Dr. George L. Smith	7:00 P.M.
Shelbyville	Friday, February 19	Bedford County General Hospital	7:00 P.M.

Dr. Behney's lectures last approximately one hour and are supplemented by visual aids. He has an excellent selection of slides to be used during the lectures, and each lecture is followed by a motion picture on the subject discussed.

The course was well received by the physicians enrolled in the first circuit area. More than seventy-five per cent of the doctors received Certificates of Attendance and the average attendance was near eighty per cent.

Instruction has just been completed in the second circuit. The fourth circuit in East Tennessee will include the centers of Greeneville, Bristol, Kingsport, Johnson City and Elizabethton, with lectures beginning there in middle April.

PERSONAL NEWS

Dr. Robert Lee Chalfant has joined the Burch Clinic of Nashville in the practice of obstetrics and gynecology.

Drs. J. B. Phillips and **Harold B. Henning** have announced their association for the practice of medicine at 4601 Brainerd Road, Chattanooga.

Dr. Clyde Alley has opened offices in Nashville for practice in the field of broncho-esophogology and otolaryngology.

Dr. Clarence C. Woodcock has returned from military service and will reopen his office for the practice of internal medicine in Nashville.

Dr. Victor Hill, Knoxville, is the new chief-of-staff at Fort Sanders Hospital.

Dr. I. H. Jones, Paris, has been elected to Alpha Omega Alpha, honorary medical fraternity, and will be initiated in May, 1954.

Dr. Sumner Brown has returned to the Chattanooga area with offices at 313 Chicamauga Avenue, Rossville, Ga.

Dr. H. L. Monroe, Erwin, succeeds **Dr. John Knapp** of Elizabethton as president of the John Sevier Chapter of the Tennessee Academy of General Practice.

Dr. James Hughes, Memphis, has been appointed to the Advisory Committee of the State Department of Public Welfare.

Dr. Dalton Oliver, Clarksville, has announced that he has accepted a position on the staff of the Acuff Clinic, Knoxville.

Dr. Burgin H. Wood announces that he will be associated with **Dr. George L. Rea** in Tazewell for the general practice of medicine.

Dr. J. C. Armstrong, Waverly, announces the association of **Dr. J. Howard Young, Jr.**, for general practice.

Dr. Stuart P. Scaton has succeeded **Dr. Paul A. Ervin, Jr.**, as chief-of-staff of the Cumberland Medical Center at Crossville.

Dr. Roy Jarvis, Sneedville, has contracted with the Hancock County Court to take over and operate the \$250,000 Hill-Burton Hospital in Sneedville which has been idle for two years.

Dr. G. B. Wyatt, Jackson, has succeeded **Dr. Leland Johnston** as chief-of-staff on the Jackson-Madison County General Hospital.

Dr. Peter W. Koenig has located in Charleston for the general practice of medicine.

Dr. James S. Henry has begun practice at Maryville with temporary offices with **Dr. C. B. LeQuire** and **Dr. James N. Proffitt** in the Blount National Bank Building.

Dr. Robert Treadwell Miller is now associated with **Dr. William R. Green**, at 3809 Dayton Boulevard, Chattanooga, for the practice of pediatrics.

Dr. J. H. Farrar, Manchester, is the new chief-of-staff of the Coffee County Hospital.

Dr. A. F. Russell, Clarksville, is the new president of the staff of New Memorial Hospital.

Dr. H. W. Qualls, Memphis, is the new chief-of-staff of the Memphis Eye, Ear, Nose and Throat Hospital.

New Officers of the Erlanger Hospital staff at Chattanooga are: **Dr. E. F. Buchner, Jr.**, chief of staff; **Dr. Moore J. Smith**, secretary; **Dr. Harold A. Schwartz, Jr.**, chief of obstetrics; **Dr. George W. Shelton**, vice-chief of staff; **Dr. Stewart P. Smith**, chief of pediatrics; **Dr. Van Fletcher**, chief of surgery; and **Dr. E. White Patton**, chief of medicine.

Dr. Horace McSwain, Paris, has succeeded **Dr. John E. Neumann** as president of the Henry County Medical Society.

Dr. John D. Caldwell, formerly of Florence, Ala., has opened his offices in Morristown in the Bank of Commerce Building for the practice of general medicine and surgery.

Dr. Arnold M. Meirowsky, Nashville, former Neurological Consultant to the Chief Surgeon of the Far East Command, was recently elected to active membership in the Society of Medical Consultants to the Armed Forces.

BOOK REVIEW

Films in Psychiatry, Psychology and Mental Health. Adolph Nichtenhauser, M.D., Marie L. Coleman, Davis S. Ruhe, M.D. New York: Health Education Council. 1953. 269 pp. Price \$6.00.

The last few years brought a marked increase in attention to mental health problems. A physician may be often called to discuss such problems. He will then find this volume on mental health movies of great help. A rapidly increasing number of

films of varying quality make a choice difficult. This book aims to save time and money in previewing films. It helps in the selection of the proper movie suitable for specific audiences.

More than forty films are previewed in careful detail, and brief reviews of an additional fifty motion pictures are included. It contains practical information by giving full data as to the sources of availability, rental fees, etc. More important, an appraisal of each film, its effectiveness, and best usage are fully discussed.

This appears to be a very welcome book to anyone concerned with the problems of mental health regardless of whether one is a general practitioner, a specialist in psychiatry, a nurse, an educator or a lay person. A very helpful chart indicates at a glance for which audience a particular film is valuable. The only criticism one could possibly have of this book lies in the nature of such publications. It becomes quickly dated since new films are continuously released. It is hoped that the publisher will find it possible to issue regular supplements.

OTTO BILLIG, M.D.

★

Children of Divorce. By J. Louise Despert, M.D. Garden City, N. Y.: Doubleday & Co. Price \$3.50.

All aspects of child and parental adjustment to the abnormal situations created by divorce are covered in this well written book. The thoroughness and practicality of the material is illustrated by the title of the first chapter, "Divorce Is Not Disaster."

The emotional safeguarding of the child is, of course, of primary consideration and even though divorce is often an undesirable alternative, children can still grow up in a relatively normal and emotionally stable environment. It is emphasized that occasionally less harm can result from divorce than from a strained, unnatural, and unhappy marriage.

Most physicians are eventually confronted with divorce problems among their patients and this material should be of help in formulating sound opinion and advice. Also parents contemplating divorce would benefit greatly by having read this book.

RANDOLPH BATSON, M.D.

Connective Tissues. Transactions of the Fourth Conference, 1953. Edited by Charles Ragan, M.D. New York: Josiah Macy, Jr., Foundation. 197 pages. Illustrated. Price \$3.75.

A number of conferences are held annually under the auspices of the Josiah Macy, Jr., Foundation to offer the opportunity to investigators in different fields to exchange ideas and thoughts on a subject of common interest. This is a most valuable approach in a day when research may be so highly specialized that investigators in one discipline can hardly know what the student in another discipline is doing even though both may be working on problems intimately related.

Thus fifteen scientists were brought together to discuss the connective tissues about which little is known. Clinical medicine, pathology, histology and biochemistry were represented in this group of investigators.

The Conference discussed: (1) General Areas of Agreement Reached in This Conference Group; (2) Isolation and Characterization of Mammalian Striated Myofibrils; (3) The Effect of Vitamin A on Organ Cultures of Skeletal and Other Tissues; (4) Outline of Problems to Be Solved in the Study of Connective Tissues.

It is from such conferences that may come important answers as to the pathogenesis and eventual control of the "rheumatic" or "rheumatoid" state and its great problem of invalidism.

R. H. K.

★

Blood Clotting and Allied Problems. Transactions of the Fifth Conference. pp. 368. 146 figures. Josiah Macy, Jr., Foundation. New York City, 1952.

In the past, the proceedings of the Macy Conferences on blood clotting have often been characterized by heated discussion and seemingly a lack of appreciable desire to correlate the results of different investigators into a useful body of knowledge. Perhaps this was the natural outcome of a decade of very intensified research in the field of blood coagulation. Nevertheless, the result was to foster seemingly hopeless.

confusion concerning blood coagulation upon the medical profession. Indeed, this often gave "coagulationists" a reputation for uncorrigibility even among other scientific investigators.

It is therefore noteworthy and encouraging that the Fifth Conference was most conciliatory in these respects. A real desire to correlate the findings of various investigators is apparent. A subcommittee report has recognized that most of the numerous recently described clotting factors actually are synonymous and fall into one of two groups. In other words most are synonyms for one or the other of two factors.

This book is much too technical to be of interest to most physicians. It should, however, be read by all investigators in the field. Difficult problems still remain concerning blood coagulation, but it is hoped that the results of investigations in this field will now be interpreted in a much more conservative manner.

ROBERT C. HARTMANN, M.D.

★

PLACEMENT SERVICE

The placement service of The Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 322 Doctors Building, Nashville 3, Tennessee.

★

Locations Wanted

Two young physicians, Priority IV, 1952 U. T. graduates, desire to locate in East or Middle Tennessee as partners in General Practice. Available October, 1953. LW-30

★

A 32 year old, married physician, Jewish Faith, priority 4, degree from Wisconsin, 1944, board certified in surgery, desires an assistant or associate relationship. Available immediately. LW-35

★

A 26 year old, married, physician, M.D. Tennessee, 1949, draft exempt, desires associate relationship for general practice and general surgery. LW-46

★

A 31 year old, married physician, Catholic, priority 4, degree from University of Tennessee, 1949, desires an associate relationship for general surgery. Available February 20, 1954. LW-47

A 28 year old, married physician, Roman Catholic, priority 4, University of Tennessee graduate, 1948, specialty internal medicine, desires clinic, assistant relationship for internal medicine. Available January, 1954. LW-48

★

A 28 year old, married physician, Protestant, graduate, Bowman Gray School of Medicine, 1946. Now completing two years of service in Air Force, in which all time was spent in obstetrics-gynecology specialty. Available January, 1954. LW-49

★

A 54 year old, married physician, Protestant, graduate University of Minnesota, board certificate in Radiology, desires smaller to medium sized community. Available immediately. LW-50

★

A 34 year old, married physician, Protestant, graduate University of Cincinnati, 1943, priority 4, desires clinic, preferred community 10,000 up, General Practice. Available March 1, 1954. LW-51

★

A 33 year old, married physician, Protestant, University of Tennessee graduate, priority 4, general practice, preferred community 5,000 to 25,000 with well equipped community hospital. Will consider group practice and industrial practice. Available March 1st. LW-52

★

A 30 year old, married physician, Protestant, graduate Duke University, priority 4, desires general surgery in small or large city. Available July 1st. LW-53

★

A 34 year old, married physician, Protestant, graduate Medical College of Virginia, priority 4, general practice, desires small to moderate community. Available July 1st. LW-54

★

A 28 year old, married physician, Protestant, graduate Emory University, at present in military service. Desires small community, would consider industrial work. Available July 1st. LW-55

★

A 37 year old, married physician, Episcopal faith, graduate Temple University Medical School, will be released from U. S. Navy June 15th. Desires location in Knoxville, internal medicine, partnership or part or full time teaching position. LW-56

★

A 28 year old, married physician, Episcopalian, graduate University of Tennessee, priority 4, desires general practice of 5,000-10,000 community. Available July 1st. LW-57

A 34 year old, married physician, Protestant, graduate Northwestern University, priority 4, desires general surgery in community of 50,000-250,000 population. Availability depending on time and place opportunity presents itself.

LW-58

★

A 27 year old, single physician, Episcopalian, graduate Baptist Memorial Hospital, Memphis, Military Status—5-A. Desires general practice in community of 10,000 to 25,000. Available April 1st.

LW-59

★

A 31 year old, married physician, Protestant, graduate University of Tennessee, priority 4, one year training in Radiology in U. S. Air Force. Desires associate in community 10,000 to 20,000. Available March 29.

LW-60

★

A 35 year old, married physician, Protestant, graduate University of Rochester, Rochester, N. Y., resigning to the inactive reserves. Specialty Urology, desires clinic, assistant or associate, community preferred 30,000 up. Available immediately.

LW-61

★

A 42 year old, married physician, Roman Catholic, graduate University of Vermont College of Medicine, priority 4, Specialty Urology 100%, desires associate or location in community of 100,000 preferably. Available March or April.

LW-62

★

A 34 year old, married physician, Protestant, graduate University of Tennessee. Previous military service October, 1945-September, 1947. Desires community 15,000-50,000. Specialty, General Surgery. Available either July, 1954, or January, 1955.

LW-63

★

A 29 year old, married physician, Protestant, graduate University of Tennessee, Military status Priority IV in September. Desires general practice in or near large city (100,000 or more). Available immediately.

LW-64

★

A 36 year old, married physician, Roman Catholic, graduate Marquette University, Milwaukee, Wis., draft exempt, Specialty Surgery in middle sized community. Available immediately.

LW-65

★

A 29 year old, married physician, Episcopal, graduate Harvard Medical School, military status. 25 months active duty USAF. Pathologist for a single general hospital of 150-300 beds. Available immediately.

LW-66

★

A 33 year old, married physician, Protestant, graduate University of Illinois, military status, deferred, no previous service. Desires general

surgery in community above 20,000. Available immediately.

LW-67

★

A 30 year old, married physician, Protestant. No obligated military service. Graduate of University of Oklahoma, beginning practice in Urology specialty. Community preferred 35,000 to 1,000,000. Available immediately.

LW-68

★

Man and wife team interested in Tennessee practice where service needed, either by themselves, in group practice or associated with older doctor. Man 35, Georgia native, Emory graduate, soon board eligible in OB-GYN; has taken part 1 American Board of Surgery exam. Wife, 33, Maryland graduate, interested surgery. Both Episcopalians. Prefer 20,000 population upward. Available April 1, after military discharge.

LW-69

★

A 31 year old, married physician, Protestant, at present in U. S. Army until June, Graduate George Washington University, Internal Medicine with specialty in Cardiology. Prefer community 10,000 or over. Available July.

LW-70

★

Married physician, Protestant, graduate University of Tennessee, at present in U. S. Air Force. Desires general practice in or near large city. Available September.

LW-71

★

1950 graduate University of Tennessee, married, Protestant, Priority 4. General Practice desired in town with hospital or relatively close. Would consider association or industrial work. 28 years old. Available immediately.

LW-72

★

Physician Wanted

Upper Cumberland County, 13,000 population with modern 30-bed hospital, needs additional physician to do General Surgery and Obstetrics.

PW-26

★

South Central Tennessee town, 1,100 population, farming and dairy center. Only doctor recently deceased. Home and office equipment available.

PW-27

★

Large West Tennessee Hospital needs replacement for Director of the Department of Radiology.

PW-32

★

Urologist in large East Tennessee city desires person to take over his office and practice. Office located in large physicians' building and is the only Urological practice in the center.

PW-33

★

Full-time Negro physician needed for full-time teacher of Pediatrics in Medical School.

PW-34

North central town, 650 population with 5,000 people in trade area desires general practitioner. Area formerly served by two physicians now deceased. Good agricultural area. PW-38

★

Partially disabled Memphis physician with large general practice and modern facilities desired associate, various financial arrangements possible. PW-40

★

General Practitioner—Interested in participating in the General Practice teaching program at the University of Tennessee on either a half-time or full-time basis. The University of Tennessee College of Medicine, General Practice Program, 874 Union Avenue, Memphis 3, Tennessee. PW-41

★

Draft exempt experimental pathologist needed at Oak Ridge National Laboratory to conduct projects to determine effects of ionizing irradiation and the pathogenesis of disease related to irradiations. Special research skills required. PW-42

★

Small town of 2,000 population, located in Northwest Tennessee, desires a replacement for doctor leaving for Military Service, approximately January 1, 1954. Practice is of general practice type, with numerous home calls made, busy office practice and long office hours due to the type of population surrounding Greenfield. Any one interested please contact Nathan F. Porter, M.D., at Porter Clinic, Greenfield, Tennessee. PW-43

★

Rapidly expanding industrial community in Southern East Tennessee desires general practitioner. Population of town, 1,000, population of trade area, 6,000. Community cooperation promised in securing housing and office space. Medical Society cooperation also assured. PW-44

★

23-bed, privately owned hospital needs General Practitioner with surgical training immediately. PW-46

★

General Practitioner to replace doctor who will be called into Military Service in the near future. Well established practice in suburban district, Nashville. PW-48

★

Wanted: An associate, in general practice. Various arrangements possible. Nine room clinic, moderately equipped. Some operating facilities. EKG, BMR, and 100 MA X-ray machine. Two three-room apartments or one five-room apartment above office. PW-49

★

General Practitioner needed for work in the Paraplegia Section of the Surgical Service of a Tennessee Veterans Administration Hospital. PW-50

Town of 5,000 population, located in West Tennessee, desires general practitioner. Population of trade area 10,000. Community cooperation promised in securing housing and office space. Wonderful opportunity for a young doctor. PW-51

★

Wanted: Physician qualified to do general practice and surgery to take over established practice and 12 bed hospital in Dandridge, Tennessee. Facilities may be either purchased or leased. Ill health required disposal. Write or call Dr. S. D. Sullenberger, Dandridge, Tennessee. PW-52

★

Good country practice for one man. Twenty miles to excellent Hospital and medical center. Open staff in the Hospital. Present Practitioner considering specializing. Modern brick clinic with X-ray, well equipped laboratory, two treatment rooms, one bedroom, consultation room, business office and large waiting room. Adequate room for expansion either behind or by adding second story. PW-53

ANNOUNCEMENTS

When You Choose Nursing

A new recruitment film, WHEN YOU CHOOSE NURSING, prepared by the Committee on Careers of the National League for Nursing, was launched at a premiere January 28th at the Lenox Hill Hospital Auditorium, New York, before an audience composed of the boards of directors of the American Nurses' Association and the National League for Nursing, representatives from allied health fields and student nurses.

John H. Hayes, chairman of the committee, in his brief remarks paid tribute to Lederle Laboratories, who contributed the film, the Mary Hitchcock Memorial Hospital of Hanover, N. H., the location of many of the scenes in the picture, and Willard Pictures, producers. Special thanks were given to the many volunteer actors including nurses and other hospital personnel, patients, and community leaders who contributed their time and services.

WHEN YOU CHOOSE NURSING shows the many opportunities open to young people today who enter this growing and changing profession. It is expected that the film will be used throughout the country in high schools, club meetings, over television stations, and in commercial theatres.

The film is 20 minutes long and can be purchased at the cost price of \$35.00 per 16 mm. film from the headquarters office at 2 Park Avenue, New York 16. Arrangements for rental can be made.

Southeastern Allergy Association

The Association will hold its annual meeting at the Dinkler-Plaza Hotel, Atlanta, on March 25-27, 1954. Additional information available from Dr. Katherine Baylis MacInnis, 1515 Bull Street, Columbia, S. C., secretary.

American Geriatrics Society

The Society will hold its eleventh annual meeting on June 17-19, 1954, at the Fairmont Hotel, San Francisco. A business session will be held on Thursday, June 17, at 9:00 a.m. at the Fairmont. Additional information available from Dr. W. O. Thompson, president, 700 North Michigan Avenue, Chicago 11, Ill.

Southeastern Surgical Congress

The twenty-second annual assembly of the Congress will be held on March 8, 9, 10, 11, 1954, at

the Dinkler-Tutwiler Hotel in Birmingham. The scientific program will feature panel discussion and lectures by noted authorities on a great variety of surgical subjects. Tennessee surgeons appearing on the program will be Dr. R. L. Sanders and Dr. Jack Greenfield, both of Memphis.

Further information and official program can be secured from Dr. B. T. Beasley, Secretary-Manager, 45 Edgewood Avenue, Atlanta 3, Ga.

International Academy of Proctology

The Sixth Annual Convention of the Academy will be held at the Palmer House, Chicago, on April 8, 9, 10, 11, 1954. There will be no registration fee. Further information and official program can be secured from Executive Office, International Academy of Proctology, 43-55 Kissena Boulevard, Flushing, New York.

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Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

MARCH, 1954

Number 3

Though the maintenance of electrolyte and water balance has reached a high level of efficiency, the adequate maintenance of caloric intake in patients unable to eat has remained as a difficult problem. Newer methods of meeting this problem have been considered by the author.

NEWER ADVANCES IN LIQUID ALIMENTATION

JOHN R. LOVELACE, M.D.,* Memphis, Tenn.

Nutrition in the average surgical patient is no problem, since the negative nitrogen balance which follows the uncomplicated operation is generally not sufficient to cause protracted physiological repercussions. However, in a patient previously depleted by an infection or injury, or in the presence of a prolonged complication, the problem of nutrition becomes a serious one.

In the past, intravenous glucose and protein hydrolysate solutions, in conjunction with electrolytes when necessary, have been used when the oral route was not available for feeding. Yet, even with combinations of these solutions, it is difficult to maintain the caloric intake necessary to supply the body's energy requirements without infusing a volume of fluid which may embarrass the cardiopulmonary apparatus, or require prolonged immobilization of the patient while the infusion is being given. Moreover, concentrated solutions may cause local thrombophlebitis. A 5 per cent glucose solution contains 50 grams of glucose or 200 calories per liter. Protein hydrolysate preparations provide approximately 400 calories per liter of 10 per cent solution (5 per cent glucose and 5 per cent protein hydrolysate). Losses through urinary excretion and inefficiency of utilization of glucose and amino acids further complicate the use of the standard intravenous preparations.

Over the past few years, the literature

has contained much on the investigative experience of those observers who have tried less familiar substances as a source of parenteral calories. Among those more recently examined are fructose, ethyl alcohol, and fat emulsions.

Fructose

In recent years there has been a lively interest in the body's ability to utilize more effectively the monosaccharide fructose than it does glucose. Cori¹ found a more rapid conversion of fructose to hepatic glycogen as compared with glucose. Vestling² and associates demonstrated a more rapid phosphorylation of fructose as compared to glucose.

Such data prompted Weichselbaum, Elman and Lund³ to investigate the comparative utilization of these substances following intravenous administration in man. They found very little fructose in the urine as compared to glucose, even with rapid infusion rates. The blood level was not as high and the degree of diuresis was less following the intravenous administration of fructose. They concluded that the body utilized fructose more rapidly than glucose, and this agrees with the conclusions of the majority of investigators in this field. However, Beal, Smith and Frost⁴ found that 10 per cent fructose when injected intravenously was not retained in man as well as was 10 per cent glucose, whether given in single one liter infusions or in three liter infusions over a period of several days. Their findings indicated that following the administration of 10 per cent fructose there

*From the Department of Surgery and the Surgical Laboratories, Medical College of The University of Tennessee, and The John Gaston Hospital, Memphis.

is definitely a greater increase in electrolyte excretion than following an injection of similar quantities of 10 per cent glucose. These investigators used the method of Somogyi in determining the reducing substances in urine. This results in lower values than does the method of Folin and Wu, which measures all active reducing substances. Investigations have shown that following the administration of fructose and galactose monosaccharides other than fructose and galactose appear in the urine. Duell¹⁵ has stated that if there is a renal threshold for fructose, it must be extremely low, because definite quantities of fructose appear in the urine after moderate amounts are taken, even though the level of fructose in the blood remains low.

Nevertheless, the caloric value of fructose is four calories per gram, the same as dextrose. Since fructose has the same osmotic pressure as dextrose, solutions containing 5 per cent dextrose and 5 per cent fructose are hypertonic, just as is 10 per cent dextrose. Consequently, the calories which can be administered daily, using either or both of these solutions, are still inadequate for the maintenance of adequate postoperative nutrition.

Intravenous Use of Alcohol

This substance has a definite place in parenteral nutrition. The first mention of alcohol administered intravenously was in a Latin dissertation by Stirius in 1668¹⁶, but only within the last decade has it been commonly used. Karp and Sakol¹⁷ have recently presented their experience with this useful drug and have encouraged its use as an adjunct in the management of the nutrition of certain types of patients.

Ethyl alcohol, as given intravenously, has a wide margin of safety. The normal person metabolizes approximately 10 cc. of pure alcohol per hour, the rate remaining constant regardless of the concentration in the blood. When this rate of infusion is exceeded intoxication may occur, and this must be kept in mind when the drug is administered. A 5 per cent solution of alcohol contains 10 cc. of 95 per cent alcohol in every 200 cc. of fluid, an amount which is completely metabolized in one hour by the average person. The alcohol received by a

patient in excess of 10 cc. per hour accumulates in the blood stream and is responsible for the production of analgesia, euphoria, loss of anxiety, and dulling of memory.

One gram of alcohol provides seven calories, although 1 cc. by volume yields only 5.6 calories. Alcohol, when administered parenterally for nutritional purposes, is usually given in conjunction with dextrose or amino acid solution. One thousand cubic centimeters of 5 per cent alcohol and 5 per cent dextrose in isotonic sodium chloride solution or water yields a total of 480 calories, 280 being derived from the alcohol and 200 from dextrose. Both alcohol and dextrose increase the body's need for thiamine, riboflavin and nicotinic acid, and thus these vitamins should be added to the alcohol and dextrose solutions.

The value of the intravenous administration of alcohol to postoperative patients may be threefold. Aside from the caloric value as a nutritional supplement, it is a sedative and an analgesic.

The systemic complications from intravenous infusion of 5 or 10 per cent alcohol are of minor importance. One observes few after-effects such as acidosis, headache, vomiting or nausea if the previously noted optimal rate of infusion is not exceeded. Occasionally, when the fluid has been given too rapidly, restlessness and inebriation may occur, but by slowing the rate of administration these symptoms will subside. Subcutaneous infiltration is to be avoided, for the presence of a 10 per cent solution of alcohol outside the vessel may cause a slough.

Since the reaction of the nervous system to alcohol is not always predictable, patients receiving it as an intravenous injection should not be left alone for any length of time. If the rate is such that the patient's sensorium is dulled, he may become less reactive to subjective and objective stimuli, such as the effect of a hot water bottle, electric pad or full bladder. Alcohol, because of its peripheral vasodilatory effect, should not be used in the presence of shock or in patients with demonstrable liver damage.

Fat Emulsions

The goal of most investigators in the field

of nutrition has been to develop an innocuous intravenous preparation of high caloric potency and of limited fluid volume. Fat emulsions have come closer to this goal than has any other preparation to date. Fat is not excreted in the urine in appreciable amounts and does not exert an osmotic effect. Therefore, it can be injected in relatively high concentrations without damage to the veins. Although fat emulsions have not become available commercially their use in man is no longer a novelty.

The most successful preparations to date have been those utilizing coconut oil in 10 per cent concentrations as the source of fat. This is purified and depyrogenized and placed in a chamber capable of exerting approximately 3,000 pounds pressure per square inch and homogenized with glucose. A stabilizing agent such as gelatin or a soybean phosphatide is used. The particle size on completion of the homogenization is less than one micron. The caloric value of the 10 per cent emulsion is approximately 1,200 calories per liter. Fat concentrations of 15 and 20 per cent which provided up to 2,100 calories per liter have been tested, but these higher concentrations have been associated with a higher reaction rate in human beings.

The most common reaction has been that of a febrile response occurring in the early phase of the post-injection period. The temperature elevation rarely exceeds 3° F. following 10 per cent emulsion. The cause of this elevation is not clear. Some observers claim that the reaction is not a pyrogenic one but a thermogenic one, resulting from the increased heat production associated with the combustion of fat. The role of the particle size of the emulsion as a thermogenic agent has been investigated but no convincing evidence of fever production has been obtained unless particles larger than ten to fifteen micra were administered intravenously.

Fat preparations from different lots have varied considerably as regards their pyrogenicity. For instance, patients reacting with a chill and fever to one preparation have shown no untoward response to a preparation containing oil from a different lot.

The second most common untoward response has been that of nausea and occasional vomiting, associated with dizziness. This may occur during the administration of the fat or shortly thereafter. Other side-effects noticed from time to time are very mild elevations in the blood pressure and flushing of the face. All of these reactions are of a very mild degree when they occur with the 10 per cent emulsions and are thought to be due to impurities present in the stabilizing agents or in the fat itself, and not to the intravenous administration of fat *per se*. No evidence of liver damage or disturbance in the fragility of the red cells has been found in the studies conducted thus far.

The technic in administering fat emulsions is similar to that for any intravenous preparation. The consistency of the preparation is such that it will drop through the usual venoclysis set and a liter can be given in two hours or less. Complete clearance of the fat from the blood stream occurs in from four to five hours. Reactions, if any, which occur as a result of the intravenous administration subside spontaneously within twenty-four hours from the time it is given. No deaths have been reported following administration of properly prepared emulsions.

Experimental evidence has supported the belief that intravenous fat is rapidly utilized. The results of animal experiments performed by Lerner⁸ *et al.* in which C₁₄ labeled tripalmitic acid was injected, and the observations in human beings of Shafiroff and associates⁹ pertaining to the intravenous injection of deuterized tristearic acid, have shown that more than 50 per cent of the isotopic tracers were recovered within a twenty-four hour period from the urinary water and water of respiration. Additional evidence of rapid utilization lies in the fact that an increase in oxygen uptake occurs during the course of these infusions. Shafiroff, Baron, Recht and Mulholland¹⁰ report the successful administration of fat emulsions subcutaneously. These investigators, utilizing the enzymatic effect of hyaluronidase, administered subcutaneously fat emulsions to twenty-two patients. They concluded that subcutaneous compares fav-

orably with intravenous administration regarding absorption, diffusion and utilization of the fat.

In summary, the role of intravenously administered fat is to provide calories. It fulfills this role well, and when a preparation can be made commercially which will remain stable under various environmental conditions a big stride in the field of parenteral nutrition will have taken place. Perhaps the investigations involving the smaller chained fatty acids will solve the reaction and storage problems. However, the number of calories made available per gram of fat infused is diminished somewhat when one uses the smaller fatty acid chains as a source of fat instead of the oils which are in use at the present time.

Oral Tube Feeding

The superiority of oral alimentation over the intravenous route is well recognized. It is more physiological, less hazardous, and requires less observation of the patient. The chief disadvantage of this type of feeding in the past has been the poor tolerance of the Levin tube by the patient, and diarrhea. With the availability of fine caliber plastic tubes we now have inexpensive, non-irritating tubes which can be tolerated in the upper gastro-intestinal tract over long periods of time. The tube used at this hospital is size PE 240, with an outside diameter of 2.4 mm. These tubes are cut to the same length as a Levin tube and passed directly through the nostril down into the stomach or jejunum, whichever is desired. The stomach is preferable to the jejunum for feeding purposes. To pass the tube into the jejunum a length of silk, alone or in conjunction with a balloon containing 5 to 10 cc. of mercury, is passed through the nostril in the manner of passing a Miller-Abbott tube. After the string is in place, well down in the jejunum, the polyethylene tube may be threaded over the string into the position desired (that is, past a partial obstruction, duodenal, pancreatic or upper small bowel fistula, et cetera). The string may then be released and allowed to pass out the rectum leaving the tube in place. This tube may be used to introduce various body fluids such as

bile, water, gastric juice, duodenal secretion, pancreatic secretions, upper small bowel content, chemicals, water soluble drugs, and feeding mixtures.

Diarrhea, the most troublesome factor in tube feeding, has been successfully managed simply by introducing the feeding into the stomach at a slow rate, i.e., 1 cc. to 1.9 cc. of formula per minute. At a rate this slow, in order to avoid plugging of the tube with the thick formula, we have found it necessary to use some form of mechanical pump. The pump described by Snyder¹¹ requires very little maintenance, is durable, and in our experience has proved satisfactory. With this pump and our formula it has been possible to give a patient up to 6,000 calories a day. The formula we are presently using provides approximately three calories per cc. and consists of the following ingredients:

Homogenized Milk	500 cc.
Gevral Protein (Lederle)	175 Gm.
Cartose (Glucose)	300 Gm.
Klim (Powdered whole milk)	75 Gm.

This formula contains 21 grams of nitrogen (130 grams protein) per liter and is low in fat. There are oral fat preparations on the market (Lipomul, Upjohn) which provide 4 calories per cc. and this is easily administered through the tube described; however, individuals as a rule cannot tolerate over 2,200 calories per day of fat orally without gastro-intestinal symptoms. With our formula it has been necessary in some cases to include in the feeding 100 grams of Banthine and variable amounts of camphorated tincture of opium the first forty-eight to seventy-two hours to inhibit intestinal motility, but after seventy-two hours it may be discontinued.

Using our low fat formula it has been possible for us to increase a patient's weight as much as one pound a day for three weeks. This has been true particularly in chronic burns when the patient had ceased to eat and had lost forty or fifty pounds during his illness.

With the use of a small mechanical blender and water or homogenized milk as a diluent, whole food may be liquefied, after bones and seeds have been removed, and be used for tube feeding. Fallis and Bar-

ron¹² have pioneered in the liquefaction of whole food and their results have been encouraging.

Gastronomy and jejunostomy procedures will seldom be necessary if one has at his disposal small polyethylene tubing and some sort of feeding pump which will deliver relatively thick mixtures at a slow, constant rate. The pump is not an absolute necessity as we have used a regular intravenous drip set up and gravity to advantage when one is not available. The only difficulty is that the feeding will have to be administered at a slightly more rapid rate or the tubing will become plugged.

Summary

Fructose, alcohol, fat emulsions and tube feeding are discussed as sources of calories in malnourished patients. Intravenously given fat is no longer an experimental procedure and commercial preparations will be available when the problem of stability under various environmental circumstances has been solved.

A method of tube feeding using a small polyethylene tube with a mechanical feeding pump is described.

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Thoughts for the physician who treats children.

BEHAVIOR PROBLEMS OF CHILDREN IN THE PHYSICIAN'S OFFICE*

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Before presenting my paper to you, I would like to state that I am fully aware of the quasi-technical character of the subject and my treatment of it herewith presented. A rather careful search of the medical literature has yielded no previously formulated suggestions that I could bring to you. It seems to me, however, that the subject bears scrutiny and that discussion of it may be of help and interest to all of us who see children in our offices. I trust that you will accept, therefore, the subjective nature of the observations and ideas that I have assembled, not that they are authoritative or universally applicable, but rather that they might stimulate us into reflection upon a very practical consideration.

Edgar Guest penned some lines about a boy who had to visit the doctor's office:

Got a sliver in my hand
An' it hurt t'beat the band,
An' got white around it, too;
Then the first thing that I knew
It was all swelled up, an' Pa
Said: "There's no use fussin', Ma,
Jes' put on his coat an' hat;
Doctor Johnson must see that."

I was scared an' yelled, because
One time when the doctor was
At our house he made me smell
Something funny, and I fell
Fast asleep, an' when I woke
Seemed like I was goin' t' choke;
An' the folks who stood about
Said I'd had my tonsils out.

An' my throat felt awful sore
An' I couldn't eat no more,
An' it hurt me when I'd talk,
An' they wouldn't let me walk.
So when Pa said I must go
To the doctor's, I said: "No,
I don't want to go tonight,
'Cause my hand will be all right."

Pa said, "Take him, Ma," an' so
I jes' knew I had to go.
An' the doctor looked an' said:
"It is very sore and red . . .
Much too sore to touch at all.

See that picture on the wall,
That one over yonder, Bud,
With the old cow in the mud?

"Once I owned a cow like that,
Jes' as brown an' big an' fat,
An' one day I pulled her tail
An' she kicked and knocked the pail
Full o' milk clean over me."
Then I looked up there t' see
His old cow above the couch,
An' right then I hollered 'Ouch!'"

"Bud," says he, "what's wrong with you;
Did the old cow kick you, too?"
An' he laughed, an' Ma said: "Son,
Never mind, now, it's all done."
Pretty soon we came away
An' my hand's all well today.
But that's first time that I knew
Picture cows could kick at you.¹

These lines present a common reaction, based upon association with a prior experience, and a homely but unique and effective solution.

Following is a list of behavior patterns frequently observed and a grouping of these according to the underlying emotional mechanism,—an etiological grouping if you will as I view them:

GROUP I

1. The complaint child
2. The shy, timid child
3. The clinging type of child
4. The infantile reacting type of child

GROUP II

1. The obviously fearful child
2. The terrified child
3. The screaming child
4. The fainting child
5. The anxious child

GROUP III

1. The fighting child
2. The resisting child
3. The "run-away" type of child
4. The "hide-away" type of child

It will be apparent that Group I includes those children who need either to narrow the contact or withdraw from contact with their environment. Into this category, therefore, fall the recessive reactions where-

*Read before the Middle Tennessee Medical Association, November 19, 1953, Murfreesboro, Tenn.

in there is an attempt to soothe inner tensions either through clinging to known security, such as mother, or reversion to autoerotic activities, such as thumbsucking, scratching, silence, etc. Group II includes reactions which in general represent an anxiety approach to an environmental situation, based again upon lack of gratification of one of the basic emotional needs,—security. These children *internalize* their conflict, even to the point of psychosomatic symptomatology. And finally Group III whose reactions represent a child's attack upon his environment in an attempt to coerce gratification of basic needs or to fight for and protect his status and well-being from threatening outside forces. In this category are grouped the aggressive behavior reactions,—aggression which is misdirected toward the *people* in the environment.²

Why do children react thus? Why is their inner security so threatened? Fundamental to all considerations of the etiology of children's behavior disorders is the principle that a child is not just a miniature edition of an adult. A child is a distinct organism. His personality is in a state of formation. It is incomplete in its individuation, changeable in its structure and functioning, and uniquely vulnerable to inner tensions and environmental pressures.² The adult is conceived of as being responsible for his behavior; the child is not. The adult restrains his impulses; the child characteristically "acts out" his. The adult has acquired insight into his need for medical attention; the child has little such insight. The sick adult *takes* his own suffering; the sick child tends to impose his suffering on his environment.² The adult holds some power to control his environment, to select his physician if you will; the child cannot control his environment. It is decided for him, his feelings in the matter notwithstanding.

Parents of sick children are often troubled with anxiety, guilt, remorse, pessimism, or over-protection, and the child may be reflecting these parental emotional reactions in his adjustment to the physician's office. I have heard unthinking and inadequate parents use the doctor as a threat in order

to obtain a more satisfactory obedience in the home, telling the child that the doctor would be called to administer a "shot" if compliance to the parent's wish was not forthcoming. Such can only provoke fear in the heart of a child. Often children react out of fear of what is to come, fear of pain, fear of a new order of things, fear of intimidation or exposure. Often children have been previously seduced into a relationship with a doctor or nurse, only to learn that the seduction was trickery and deceit and was a device belying an ulterior purpose that the child was totally unprepared to cope with emotionally. Lack of knowledge or association with old painful experiences may provoke a seemingly inappropriate reaction. I recall such an incident in clinic one day. A boy of nine overheard an interne say he was to have a "shot." The child immediately broke loose and began to run for his life, terrified, and afraid. When, after a lengthy period of time he was returned and calmed, it developed that the only association he had with the word "shot" was when his mother had been fatally "shot" by his father in the presence of himself. He, too, fully expected to be shot as his mother had been.

Finally, I should like to present some simple suggestions that might serve to build new relationships between ourselves and the children we serve. If and when possible, we might encourage parents to prepare children for their visit to the doctor, honestly and forthrightly, free of alarm and full of explanation and understanding. If we are to accommodate children in our offices, let us make provision for them with a playroom or a play area in the corner of the waiting room, adequately demarcated by a simple rail, and containing toys, books, crayons, paper, and other simple things to captivate the interests and divert the attention of children. If there are children in the family other than the one needing attention, encourage the mother to bring the others to the play area so that they may enjoy the visit to the doctor's office as an excursion into a new play experience, so that the doctor's office will connote fun instead of fright. Often a box of lollipops on the doctor's desk

will help the child to relate to the doctor as a friend who understands.

We must be vigilant ourselves, and must instill the same into our office personnel, to be sensitive to the individual differences and varied emotional responses of the children coming before us. We must proceed with our diagnostic and therapeutic procedures cautiously and slowly, building first a personal human relationship. The time we spend in so doing may mean success instead of failure, ease instead of struggle, friend instead of foe. If we expect to work with children, we must be willing to spend the time necessary to develop a bridge of relationship with every child. We must also be willing to explain to children in their own language the methods we employ and the ways in which we can help them. Allow the child to handle and explore the instruments that we take so for granted. Let him listen to his own heart through your stethoscope! Some have found it helpful to group children's visits on the office calendar, the effect being to strengthen the child's position through the presence of other children. I should like also to suggest that whenever possible we use the oral rather than the parenteral administration of medication. Many children have the feeling that "doctor" and "shot" are synonymous terms. Numerous are the children whose every association with the doctor has netted some type of hypodermic injection. Is it strange, therefore, that they develop an intense emotional reaction to us? Parenthetically, I should like to suggest that the term "shot" be stricken from medical parlance and abandoned altogether. It is to me a poor term, misleading in its connotation and provocative of unnecessary and inappropriate emotional repercussions.

The practice of medicine is both a science and a philosophy. In our desire to render expert scientific and technical service we must not sell short the human interpersonal relationship. There is no human experience but what has its emotional complement. Similarly there is no illness nor child in the doctor's office without an especial emotional response,—the child reacting appropriately and in direct proportion to his own emotional needs even though the reaction may

seem grossly inappropriate to adult minds. If we will see the child as a child, and recognize the inner tensions and fears that the visit to the doctor's office provokes, we will find much personal gratification in our work with children and will make a substantial contribution to their emotional maturity and happiness.

In closing I should like to quote from Anthony Trollope's "Doctor Thorne":

... Among the doctor's attributes, not hitherto mentioned, was an aptitude for the society of children. He delighted to talk to children, and to play with them, . . . invent games for them, contrive amusements in circumstances which seemed quite adverse to all manner of delight, and, above all, his physic was not nearly so nasty as that which came from Silverbridge.

He had a great theory as to the happiness of children; and though he was not disposed altogether to throw over the precepts of Solomon,—always bargaining that he should, under no circumstances, be himself the executioner,—he argued that the principal duty which a parent owed to a child was to make him happy. Not only was the man to be made happy,—the future man, if that might be possible,—but the existing boy was to be treated with equal favour; and his happiness, so said the doctor, was of much easier attainment.

"Why struggle after future advantage at the expense of present pain, seeing that the results were so very doubtful?" Many an opponent of the doctor had thought to catch him on the hip when so singular a doctrine was broached; but they were not always successful. "What!" said his sensible enemies, "is Johnny not to be taught to read because he does not like it?" "Johnny must read by all means," would the doctor answer; "but is it necessary that he should not like it? If the perceptor have it in him, may not Johnny learn, not only to read, but to like to learn to read?"

"But," would say the enemies, "children must be controlled." "And so must men also," would say the doctor. "I must not steal your peaches, nor make love to your wife, nor libel your character. Much as I might wish through my natural depravity to indulge in such vices, I am debarred from them without pain, and I may almost say without unhappiness."

And so the argument went on, neither party convincing the other. But, in the meantime, the children of the neighborhood became very fond of Dr. Thorne.³

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Glucose Tolerance in Hypertension and Obesity.

M. L. Drazin, Diabetes 2:433, 1953.

The frequent co-existence of hypertension, obesity, and decreased glucose tolerance prompted this investigator to study the problem, with the idea of elucidating the separate and combined effects of hypertension and obesity in this situation. Three groups of patients were studied: a) those with hypertension and obesity, b) those with obesity without hypertension, and c) those with hypertension without obesity. All patients were males, between the ages of 20 and 73, all were unmistakably overweight, and the distribution of the three groups was comparable.

The standard one-dose oral glucose tolerance test was employed. The criteria used were as follows: a 2-hour blood sugar level of 135-149 mg.% was designated slightly abnormal, and a 2-hour level of 150 mg.% or above was considered grossly abnormal.

There was a strikingly high incidence of diminished glucose tolerance. Among the obese hypertensives, 63.3% were grossly abnormal, and 8.4% were slightly abnormal. Among the obese normotensives, 23.8% were grossly abnormal, and 21.4% were slightly abnormal. Among the non-obese hypertensives, 21.1% were grossly abnormal, and 15.4% were slightly abnormal.

The decreased glucose tolerance occurred more frequently where hypertension and obesity co-existed. It was pointed out that both of these conditions tend to slow down the individual, and that the enforced inactivity may have an influence on the diminution of the glucose tolerance. (Abstracted for the Tennessee Diabetes Association by Jean Murray Hawkes, M.D., Memphis.)

This paper directs attention to the high incidence of cholelithiasis in elderly persons, and the ease with which their demonstration may lead the clinician away from the consideration of more serious disease as the cause of symptoms.

THE INCIDENCE OF CHOLELITHIASIS IN THE OLDER AGE GROUPS

Two Case Reports of Undiagnosed Carcinoma of the Colon Discovered at Laparotomy for Cholelithiasis

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The acute manifestations of gallbladder disease are associated with a fairly characteristic symptomatology. Their differential diagnosis has received full treatment in standard texts and current medical literature. On the other hand, chronic cholecystitis and cholelithiasis are frequently associated with a nonspecific symptomatology. We are, therefore, wont to be satisfied with the demonstration of a nonfunctioning gallbladder or visualization of stones within the gallbladder as the explanation for vague abdominal complaints. The evidence of chronic gallbladder disease in the older age groups as revealed by study of autopsy material is high. As a consequence diagnostic errors such as those reported below are apt to occur.

Case Reports

Case 1. B.M. (Barnes Hospital No. 171585). A 59 year old white female was admitted to the Surgical Service of Barnes Hospital, St. Louis, on May 4, 1949, for cholecystectomy. Fifteen years before she had undergone a cholecystostomy for right upper quadrant pain associated with jaundice. A single large stone was removed. For approximately two years prior to admission she had experienced recurring attacks of cramping upper abdominal pain associated with "bloating." The patient could not relate these attacks particularly to the intake of food. Relief was frequently obtained by catharsis. There was no associated jaundice, chills, fever, nausea or vomiting, or melena. Two weeks before admission the pain localized to the right upper quadrant for a period of several hours. The patient's local physician on noting a tender mass in that region referred her to Barnes Hospital.

Physical examination revealed a moderately obese female in no distress. There was a firm, moderately tender mass in the right upper quadrant which moved with inspiration. No other findings of significance were noted.

Liver function studies were within normal limits. Red blood cell count was 3.92 million per cmm.; and Hgb. 8 Gm. Stools were not examined for blood. Cholecystograms utilizing a standard dose of dye were performed on one occasion and revealed a nonfunctioning gallbladder. No X-ray studies of the gastro-intestinal tract were made.

The patient received 500 cc. of whole blood prior to operation. On May 7 exploratory laparotomy was performed with a clinical diagnosis of hydrops or carcinoma of the gallbladder. The gallbladder was small, fibrous and contained stones on palpation. A carcinoma of the right half of the transverse colon was found to be the mass palpated pre-operatively. An obstructive resection was performed.

Pathological examination of the specimen revealed adenocarcinoma with no involvement of the regional nodes.

The double-barreled colostomy was subsequently closed. The patient did well until October, 1951. It was necessary at that time to re-admit the patient for repair of a ventral hernia. There was no evidence of recurrence of the carcinoma. The gallbladder was not removed because of dense adhesions in the region. The patient was last seen in April, 1953, at which time she was doing well.

Comment. This patient undoubtedly received inadequate pre-operative study. The history of relief of discomfort by catharsis along with the presence of an anemia and a mass should have aroused the suspicion of malignancy. However, all observers were misled into assuming that the problem lay with the gallbladder by the clear-cut history of gallbladder disease in the past, associated with nonvisualization by oral cholecystography.

Case 2. T.L.P. (VUH No. 200262). This 68 year old white male was admitted to the Surgical Service at the Vanderbilt University Hospital on July 9, 1951, from the Surgical Out-Patient Department for cholecystectomy. He had been seen first 3 weeks before complaining of abdominal discomfort of 4 months duration. This pain was described as being localized to the right upper quadrant and epigastrium with radiation to the back, lower abdomen and right shoulder. It was

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associated at times with "heartburn" and eructations. It occurred following the intake of food of any kind but was particularly related to the intake of fatty or greasy foods. The discomfort was at times cramping in nature and of several hours duration. It was not associated with nausea or vomiting. It was sometimes relieved by evacuation of the colon. There had been no associated melena, jaundice, chills or fever. The patient had been troubled with constipation for many years with no recent aggravation of this difficulty. There had been a questionable loss of weight. The past history revealed an attack of typhoid fever 39 years before and unilateral mumps orchitis.

Physical examination revealed a well preserved white male of stated age. Blood pressure 140/80. No abdominal masses or organs were palpable. The right testicle was atrophic. No other positive findings of significance were noted. A sigmoidoscopic examination after admission to the hospital was negative.

Standard and double dose oral cholecystograms with Priodax were performed prior to admission. No concentration of dye in the gallbladder was visualized on either occasion. Two slightly radioopaque shadows were present in the right upper quadrant and were thought probably to represent gallstones. A barium enema was reported to reveal no abnormalities.

The laboratory studies showed the following:—Hgb. 12.5 Gm.; PCV 42%; TSP 7.22, albumin 4.16, globulin 3.06 Gm. %; NPN 40 mg. %; serum amylase 35 somogyi units. Stools were not examined for blood.

The patient was operated upon on July 11 with a diagnosis of cholelithiasis. A small amount of clear fluid was present in the abdominal cavity. The gallbladder was thickened and contained 2 stones. A constricting lesion of the ascending colon was present, associated with innumerable peritoneal implants. A palliative side-to-side ileotransverse colostomy was performed. Biopsy of an omental nodule revealed a poorly differentiated adenocarcinoma. The patient's postoperative course was uncomplicated. He expired on October 31, 1951, a little over 3 months after discharge.

Comment. It was felt by those observers who referred this patient to the hospital that his symptoms could be adequately explained on the basis of the demonstrated cholelithiasis. Sigmoidoscopic and barium enema examinations were reported as being within normal limits after admission to the hospital. The difficulties encountered at times in demonstrating colonic lesions by barium examination have been previously referred to by Finney and Stone.¹ This in no way alters the obvious fact that such an examination was well advised in this patient.

Autopsy Data

A review of a total of 526 autopsies performed at the Vanderbilt University Hospital from 1947 through 1951, inclusive, of patients over 40 years of age, revealed an incidence of cholelithiasis in 43 or 8.2 per cent. This figure is considerably lower than that reported by others. Warren² found an incidence of 21.4 per cent in 500 autopsies in nondiabetic patients over the age of 30, and 30.7 per cent in 453 diabetic patients of a similar age distribution. Similarly, Dessau reports an incidence of 20.9 per cent in 2,791 postmortem examinations of patients over the age of 40. He noted further that the percentage of patients with gallstones increased with the age of the groups examined. The incidence was greatest in females by a ratio of approximately 2 to 1.

Discussion

The frequent lack of a specific symptom complex resulting from cholelithiasis and or chronic cholecystitis is well known. That the same is true early in the clinical course of malignant tumors of the gastro-intestinal tract is also a well recognized fact. The high incidence of previously undiagnosed cholelithiasis in the older age groups is probably not as generally realized. On the basis of the figures quoted above it would appear fair to assume that cholelithiasis will co-exist with malignant tumors of the gastro-intestinal tract in approximately 20 per cent of patients with such tumors above the age of 40.

We have felt it wise to adopt a policy of routine complete gastro-intestinal examinations in the evaluation of vague abdominal symptoms in the older age groups. The assumption that such symptoms are secondary to chronic gallbladder disease without further investigation will lead to diagnostic errors such as those reported. The advantages to be gained by such a policy, particularly in the demonstration of early gastro-intestinal malignant tumors, should outweigh economic considerations. Thereby, the necessity at the time of laparotomy for cholelithiasis of treating such a tumor for which neither we nor the patient are prepared can be avoided. Furthermore, conditions other than neoplastic ones may be dis-

covered which are primarily responsible for the clinical picture.

The fact that carcinoma of the colon was not demonstrated until laparotomy in the 2 patients reported apparently did not adversely affect the outcome of the operative procedures performed. Nevertheless, the undesirability of such a sequence of events cannot be contested.

Summary

The high incidence of cholelithiasis in the older age groups and the resultant differen-

tial diagnostic and therapeutic implications are discussed. Two cases of previously undiagnosed carcinoma of the colon discovered at laparotomy for cholelithiasis are described.

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The complication of bleeding in the third trimester of pregnancy requires proper diagnosis as to cause, and careful thought as to management. The well-being and life of both mother and child are at stake.

MANAGEMENT OF BLEEDING IN THE THIRD TRIMESTER OF PREGNANCY*

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For those of us who do obstetrics probably nothing is more frightening, more difficult to deal with and gives poorer results than bleeding during the last trimester of pregnancy. It frightens the family, the patient and the doctor and endangers the life of the mother and child. I would like to discuss with you today not so much the differential diagnosis of bleeding during the latter part of pregnancy but rather the idea of management of patients presenting with this symptom. There are any number of factors which can cause vaginal bleeding at this time. They include placenta praevia, premature separation of the placenta, ruptured marginal sinus, carcinoma, erosion, polyps, vaginitis, vasa praevia, trauma, and I believe we should include rectal bleeding as this may be confusing to the patient.

Of all these causes, the most common and the most important as far as diagnosis and management is concerned, are placenta praevia and premature separation of the placenta. We learn in medical school about the classical signs which differentiate between these conditions. We learn that in placenta praevia the bleeding is painless, intermittent, and not necessarily related to toxemia. We learn that the bleeding from a premature separation of the placenta is very painful, frequently associated with toxemia, associated with a hard, tense uterus which is tender and frequently the fetal heart is absent. Unfortunately, in practice it is not always this easy. Frequently I find it impossible to definitely differentiate between these two until either a vaginal examination is done or sometimes not until after the baby is delivered and the placenta is examined.

Placenta Praevia

When a patient comes in with a fairly profuse amount of painless vaginal bleeding in the last trimester of pregnancy, with no uterine tenderness or tenseness, we must assume that she has a placenta praevia until it is proven otherwise. In the management of these cases of bleeding it is rather difficult to set down any hard and fast rules. One must individualize the problem in each particular patient. Our goal is the delivery of a living child and leaving the mother unharmed.

Thus, if the pregnancy has not proceeded far enough to get a viable infant, it is preferable that a conservative attitude be maintained, that blood loss be replaced, that no attempts at delivery be made until several weeks have passed and until pregnancy has proceeded far enough so there is a good chance of getting a living baby. This is the ideal management and can only be done if the patient is not bleeding excessively. If one encounters such a patient at say around seven months, ideally she should be hospitalized then and for the remainder of her pregnancy. The bleeding can become profuse at any time. However, it is not practical to treat patients in this manner. I do feel that they should be hospitalized initially or watched very carefully in the home. If the bleeding subsides the patient may be sent home. Instructions should be given about the possibility of brisk bleeding occurring. Someone, either in the family or a neighbor, should at all times have a car available for an immediate trip to the hospital; it should not be necessary for the patient to call her husband home from work for transportation which in some cases might cause considerable delay and considerable loss of blood. Thus in such a patient, we hope to be able to carry her to eight, eight and a half, or nine months,

*Read before the West Tennessee Medical and Surgical Association, May 28, 1953, Dyersburg, Tenn.

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awaiting either the spontaneous onset of labor or the occurrence of enough bleeding to make interference imperative.

The patient with a probable diagnosis of placenta praevia should not be examined vaginally or rectally until such time as one is ready to carry out delivery. I want to emphasize this statement. If the bleeding subsides, let her go unexamined. Frequently, touching the placenta praevia on vaginal examination will stir up brisk hemorrhage, making delivery necessary when more time might have been gained to give the baby a better chance for survival.

Prematurity is the main cause of fetal loss in placenta praevia. The more one can do about the prematurity the better will be the fetal salvage rate. If the bleeding occurs during the last month of pregnancy, or if one has waited until a large enough baby is attained, then one need not be so reluctant about proceeding with delivery. It is better to await the onset of labor if possible. However either early or late, this is sometimes impossible and definite steps must be taken.

In the management of these patients about to be delivered blood replacement is of prime importance. The next step should be sterile vaginal examination to definitely make the diagnosis and to determine what type of treatment should be carried out. This vaginal examination should be carried out regardless of the patient's condition, amount of bleeding, or the presence or absence of labor. In the patient with severe hemorrhage some advocate cesarean section without vaginal examination. However, usually rupture of the membranes in the case of a partial placenta praevia with a favorable cervix, will stop the hemorrhage immediately, much quicker than could be done by cesarean section and with a total of much less blood loss for the patient. We accomplish two things by this examination, one, a definite diagnosis and two, determining the type of delivery best suited to this individual patient. This latter depends on the condition of the cervix.

In the presence of a *complete placenta praevia* the only treatment is cesarean section.

In the case of a *partial placenta praevia*

with a cervix which is "ripe," that is, which is soft, partially open and is amenable to induction of labor, rupture of the membranes is the preferable treatment. This allows the head to settle against the cervix, compressing the placenta and stopping the bleeding. It is often miraculous how quickly, easily, and completely the hemorrhage stops as soon as this procedure is done. Labor will usually ensue in a matter of six to eight or ten hours followed by spontaneous delivery. This can be done only when the vertex is presenting. In case of a transverse or shoulder position a cesarean section would be preferable. Fortunately, a breech presentation with placenta praevia is not too common. Here, cesarean section may be used if the baby has reached viability or, in the case of an earlier pregnancy, a leg may be pulled down against the cervix compressing the placenta and controlling the bleeding and inducing labor. In case the membranes have ruptured and labor does not begin soon, pitocin stimulation may be carried out by intravenous drip. Cesarean section should be used in those cases of partial placenta praevia in which the cervix is long, thick, or hard and is obviously not amenable to induction of labor. If cesarean section is done, the lower uterine segment should be packed from above after delivery to help control the postpartum hemorrhage. This latter is one of the most dangerous complications of placenta praevia, probably more dangerous to the mother than is the bleeding before delivery. Fetal mortality is bound to be increased in placenta praevia. One great reason for this is prematurity, another is hemorrhage. As we mentioned above, conservatism and waiting will help reduce the incidence of prematurity and will help increase our fetal salvage rate. A brief case report will help to clarify the above remarks.

Mrs. E. A., a 30 year old, gravida 3, para 2, had been followed prenatally with no complications until at 6 months she had intermittent painless vaginal spotting. At 7 months gestation the bleeding was heavy and she was hospitalized. Placenta praevia was presumed because there was no pain; bleeding was intermittent and the fetal head was floating and could not be pushed into the pelvis. Vaginal examination was not done.

After 4 days the bleeding stopped and she was

sent home, nine miles away. A neighbor stayed at home with a car whenever the husband was at work. Bleeding continued off and on, and one month later became excessive therefore she was brought back into the hospital.

Soon after admission bleeding was profuse and she was having some irregular uterine contractions. Blood was given and sterile vaginal examination was done. The cervix was soft and 4 cm. dilated. The placenta was felt on the right side posteriorly, partially covering the cervical os. The membranes were ruptured, the head settled against the cervix and the bleeding stopped. In two and a half hours she delivered a living, healthy, six pound, two ounce girl and had no further complications.

Premature Separation of Placenta

When the diagnosis of premature separation of the placenta is made, delivery of the infant should be carried out within a very short period of time regardless of the stage of pregnancy. Here, as before, blood replacement is of prime importance. Then vaginal examination should be done to determine the type of delivery which is most suited in this particular patient. Here again, each patient must be treated as an individual problem and few definite rules can be laid down.

If the cervix is at all open, control of the bleeding and prompt labor will usually ensue following rupture of the membrane. Certainly in the presence of a dead baby this is the preferable method of treatment. Even with a dead baby, however, in the presence of a long, closed, hard cervix cesarean section will be indicated in order to preserve the mother's life. If the baby is alive we really have a problem. Fortunately, a number of these women are already in labor or start labor very soon after the separation occurs. In such a case, with the cervix open four or five centimeters or more, rupture of the membranes will usually bring a rapid termination of labor within one or two hours, and delivery of a living child will take place. For some unknown reason, but very fortunately, women with premature separation of the placenta have very rapid labors following rupture of the membranes. However, if the baby is still alive and the cervix is not completely favorable for delivery, or in a primipara is not dilated over two or three centimeters, a cesarean section probably would be the indi-

cated treatment on the basis of getting a live baby. In case labor does not ensue for some reason soon after rupture of the membranes, say in five or six hours, pitocin stimulation by intravenous drip may be very effective in initiating contractions.

One complication which may occur is couvelaire uterus. This is such extensive infiltration of the uterine musculature with blood that its contractile powers are reduced. It is more likely to occur where the separation has been present for quite a long time. This factor should encourage us to deliver these women quickly.

Cervical and Vaginal Bleeding Lesions

Should bleeding occur in a patient in whom the diagnosis of premature separation of the placenta is not made and in whom the diagnosis of placenta praevia is questionable, one must look for another cause of bleeding. Such a patient, and even in the patient in whom the diagnosis of placenta praevia is suspected, should have a speculum examination before going home or leaving the office. In this way carcinoma, erosion, cervical polyp, vaginitis, or other cause will be found.

Cervical carcinoma can be diagnosed and treated in only a little different manner from the lesion without pregnancy. Cervical erosion is frequent in pregnancy but does not necessarily need to be treated. A cervical polyp may be removed if bleeding is excessive; if not, conservative treatment and observation are indicated.

Thrush, trichomonas, or other vaginitis may be found and may be treated as at any other time until around seven or seven and a half months of pregnancy. At this time I feel our usual treatments for these conditions, such as intravaginal applications and douches should not be carried out, particularly in the multipara who may have an open cervical os. Probably the best treatment for such conditions is the realization where the bleeding is coming from, and the symptomatic treatment of any discharge or itching which may occur with cleansing of the vulvar area and topical application.

Ruptured Marginal Sinus

We see any number of patients with bleeding along at this stage of pregnancy whom we feel pretty sure do not have a

premature separation of the placenta. They have some pain but not much and it is usually localized to one area of the uterus. There is no tenderness. Fetal heart sounds continue to be good. There are no signs or symptoms causing one to suspect placenta praevia. A number of such patients have a rupture of the marginal sinus. This particular pathological entity has come to the front only in recent years and much has been learned about it through extensive study and investigation. In normal placental circulation maternal blood enters through the uterine arteries into the placental site, courses through the intervillous spaces laterally through the placenta into a large venous sinus at the lateral edge of the placenta. This is bounded by membranes, decidua and placenta. From here blood returns to the uterine sinuses and thence to the maternal circulation.

Occasionally, due to unknown causes, a tear occurs in this marginal sinus resulting in hemorrhage between the membranes and the uterine muscle. This may or may not cause vaginal bleeding. Occasionally some pain may be associated at the time, and the differential diagnosis between this condition and premature separation of the placenta may be difficult, if not impossible.

Treatment here should be expectant though the diagnosis cannot be definitely established until after the placenta has been delivered. In a number of cases the condition so stimulates premature separation of the placenta that delivery must be carried out immediately. Actually this lesion rarely causes difficulty by itself for the bleeding is rarely of sufficient magnitude to be dangerous and causes no harm to the fetus. However, it can only be diagnosed after delivery and this is what causes the difficulty. Probably twenty to thirty per cent of cases of vaginal bleeding in the late trimester of pregnancy are due to this condition. This explains many of the cases where bleeding occurs once or twice in pregnancy and then stops. It is the cause of many of the cases where no other pathology can be found and we diagnose this only after delivery and examination of the placenta.

Vasa Praevia

Vasa praevia is rare. Usually bleeding from this condition occurs only after the membranes have ruptured and its difficulty lies in the differential diagnosis from other conditions. Treatment should be expectant except in the rare case where the bleeding is excessive and early delivery is not anticipated. Then cesarean section would be indicated because blood that is being lost in this case is fetal.

Trauma

Rectal bleeding or bleeding from vulval or vaginal trauma can be readily recognized by careful history and examination.

Summary

1. Vaginal bleeding in the third trimester of pregnancy constitutes one of the most dangerous symptoms one may encounter in obstetric patients.

2. The prime conditions of concern are placenta praevia and premature separation of the placenta. When the former is diagnosed, conservatism should be the rule until pregnancy has proceeded far enough for us to be certain of a living baby. In cases of excessive hemorrhage early delivery may be indicated. If delivery is indicated in placenta praevia each case must be carefully individualized. In central placenta praevia delivery should be by cesarean section. In the marginal placenta praevia, delivery can be either vaginal or abdominal depending upon the condition and ripeness of the cervix. In cases of premature separation of the placenta, delivery usually can be accomplished vaginally following simple rupture of the membranes. In the case of a living baby and early delivery is not anticipated, cesarean section is the method of choice. Even with a dead baby and a long, closed, hard cervix, cesarean section is indicated. In both conditions prompt replacement of blood is imperative.

3. Other causes of bleeding are mentioned briefly. Treatment usually depends upon the local cause, treatment being the same as that in a non-pregnant individual. Following a conservative attitude toward these patients, maternal and fetal salvage can both be greatly increased.

CASE REPORT

Diabetes Mellitus and Dwarfism Due to Primary Hypothyroidism*

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Memphis, Tenn.

This case report is presented because of its unusual nature. It concerns the concomitant occurrence of diabetes mellitus and dwarfism due to primary hypothyroidism. The patient was first seen at the age of eight years and the thyroid condition was recognized. After a nine year lapse from observation she returned in diabetic coma and presented numerous diagnostic and therapeutic problems.

A 19 year old Negro female was admitted in a semicomatose state to the John Gaston Hospital on February 15, 1953. The present illness began with "flu" 3 weeks previously. Since that time weakness had been prominent and progressive, becoming severe the day before admission. The appetite had been good but she was thought to have lost weight. The night before admission, she voided four or five times, had experienced nausea and gagging but no vomiting had occurred. Semi-coma developed 5 hours preceding hospitalization.

The patient was a full term baby and delivery was uneventful except for breech presentation. Birth weight was 7 pounds. At age 8, the mother observed that the younger siblings were outgrowing the patient, that she was not as lively as previously, and that she came home from school excessively fatigued.

For the next 2 years she was followed in the out-patient department of the John Gaston Hospital where she was treated with desiccated thyroid in dosage up to one grain daily. This regimen resulted in an increase in energy but no gain in weight and height.

During the summer of 1952 she fainted once and recovered spontaneously. This syncopal attack was attributed to the hot weather. She has had poor hearing since an attack of measles at age four. Menstruation began at 15 years of age. Periods occur at intervals of twenty-eight days, last for three days and the flow is average.

The patient started to school at age 6 years and completed the eighth grade. She failed the fourth grade due to loss of time spent in going to the out-patient department. She engages in household tasks and helps attend the younger siblings.

The patient was the fifth of fifteen pregnancies.

*Read before the Meeting of the Tennessee Diabetes Association, April 15, 1953, Memphis, Tenn.

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One pregnancy ended in abortion at 5 months. Three siblings are dead, one from hemorrhage of the newborn, another from hydrocephalus and a third of causes unknown. The other siblings are well and apparently normal. Two paternal cousins are known to have diabetes mellitus.

Physical examination revealed a child-like, semicomatose, dehydrated female. Measurements in inches were as follows: height, 45, vertex to symphysis 25, symphysis to floor 20, span 44. Weight was 49 pounds. Temperature was recorded as 95.6 F.; the pulse, 112 per minute; respirations were 36 per minute and shallow. The blood pressure was not obtainable.

Dental development was retarded. Consultation with the dental surgeon was reported as follows. "The patient had all permanent first molar teeth present. The upper left permanent central and lateral incisors and first premolar teeth are present. The lower four incisor teeth (permanent) are present along with lower permanent first molar teeth. The lower second primary molars and the upper right primary central incisors are missing. Dentition represents or is consistent with that of a ten or twelve year old child, although eruption schedule was irregular."

The thyroid gland was not palpable. The chest was clear. There was no enlargement of the heart; there was a tachycardia with a regular rhythm, and no murmurs were heard. A small amount of mammary tissue was present. The abdomen was distended and no masses or viscera were palpable. Pubic and axillary hair was scanty; the skin was dry and scaling. Neurologic examination was not remarkable except for the lethargic state.

Later evaluations of the eyes and pelvis by ophthalmologic and gynecologic consultants respectively were as follows: "The visual fields were generally reduced. This finding was thought to be due to slow reaction time rather than any optic pathology. The discs had clear borders, physiologic cupping and color. There was slight sclerosis of the arteries. There was general choroidal sclerosis and degeneration, no hemorrhage or exudate. The maculae appeared granular as in senile degeneration. 'Impression: abnormally aged fundi and fields within normal limits, if considered due to slow response and only fair reliability.'" "Pelvic examination revealed vulva, clitoris, introitus of miniature proportions but of normal adult type with pubic hair. Introitus admitted one finger with ease. Cervix was small, clean, of mature type. Minimal leucorrhea was present. Vagina was normal. Uterus was second degree retroverted, normal or probably slightly subnormal in size. In the right adnexa—no masses were felt nor could the ovary be identified. In the left adnexa—an irregular, woody hard and nodular, freely-movable, pecan-size mass could be felt in the region of the left ovary."

The first urine specimen was discarded inadvertently, therefore *acute adrenal insufficiency*

was the original working diagnosis. She received Cortisone 50 mg. intramuscularly, 500 ml. Ringer's lactate in 5% glucose intravenously, Wyamine 9.5 mg. intravenously, Lipo-adrenal extract 2 ml. intramuscularly, Eschatin 10 ml. intravenously and 250 ml. of whole blood intravenously. She then responded to questioning.

At that time urine and blood studies were reported as follows: hematocrit 32 vol. %; WBC 20,550 per cmm. with a slight shift to the left; sugar 500 mg. %, NPN 39 mg. %, chlorides (as NaCl) 585 mg. %, and serum CO₂CP 10 vol. %; 4+ glycosuria and acetonuria.

The plan of therapy then was directed toward correction of the *diabetic acidosis*, to which management she responded. After the diabetic acidosis was controlled, further diagnostic studies were obtained to elucidate the multiple metabolic defects which were apparent.

Examination of the skull and long bones by the X-ray revealed a bone age of about 9 years. Basal metabolic rate was estimated at minus 65 per cent. Protein-bound-iodine was reported as 3.3 micrograms per 100 ml. of serum. Radioactive iodine uptake, after oral ingestion of 100 micro-curies of I₁₃₁, measured by a Geiger-Mueller count over the neck 24 hours later, was 7.7 per cent. The 24 hour urinary excretion of 17 keto-steroids as dehydro-iso-androsterone acetate was 2.8 mg. Too few eosinophiles were found on absolute count to allow application of the epinephrine test. Total serum protein was 7.6, albumin 3.1 and globulin 4.5 Gm. per cent. The serum alkaline phosphatase was 5.9 units (Bodansky). Plasma cholesterol fell from a value of 486 mg. % to 196 with correction of the diabetic acidosis.

She was discharged on an American Diabetic Association diet of 1,500 calories, 25 units of Neutral Protamine Hagedorn insulin and desiccated thyroid gr. 1 daily.

Final diagnosis was diabetes mellitus acidosis and hypothyroid-dwarfism.

Discussion

The etiology of this patient's dwarfism was the subject of much speculation during her hospitalization. Although she had diabetes mellitus, a condition with which short stature is not uncommonly associated in children, the dwarfism antedated the diabetes by at least ten years. Hypopituitarism was ruled out by the normal sexual development, the menstruation, and the fact

that she developed a stable diabetes without tendencies to hypoglycemia. The dry scaly skin was not that of the pituitary dwarf, and there was no evidence of adrenocortical hypofunction. Her tolerance for thyroid medication also militated against this diagnosis. Nutritional causes for her size could not be substantiated, since she was well nourished for her size and had always had a good appetite and adequate diet.

Hypothyroid dwarfism remained as the most likely diagnosis. In these patients, sexual maturity occurs eventually even in absence of therapy, as it did in this patient. The skin, the apathy, umbilical hernia, and slow teething favored this diagnosis. The protein-bound-iodine was not so low as might be expected, and the basal metabolic rate reported is of dubious quantitative value at that level but certainly indicates hypofunction of the thyroid. Hypothyroidism for long periods results in such general hypometabolism that some signs of hypopituitarism and under-function of other organs and systems occur which compound the confused general picture, as in this case.

Her subsequent response to thyroid substance has not borne out our diagnosis quite so dramatically as we had hoped, but there is definite progress. The diabetes mellitus remains stable and is apparently completely unrelated to the growth problem.

Summary

1. A case of dwarfism due to primary hypothyroidism with associated diabetes mellitus is presented.
2. The two disturbances in endocrine metabolism appear to be separate entities, existing concomitantly in the same individual.
3. The "law of parsimony" should not be followed rigidly in seeking the etiology of diagnostic problems.
4. History and physical examination remain the sources of the most important clues to correct diagnosis, and laboratory data are used only as confirmatory evidence.

STAFF CONFERENCE

Vanderbilt University Hospital, Nashville, Tenn.

1. Paraplegia from Metastatic Spinal Disease* 2. Syringomyelia

DR. BERTRAM E. SPROFKIN: We have two neurological problems to discuss today. Dr. Green will present the history of the first case.

DR. GREEN: This is the first Vanderbilt University Hospital admission of a 73 year old white female who enters with the chief complaint of inability to walk. Approximately 12 months prior to admission she had an upper respiratory infection associated with shoulder pain. Later, she began to experience pain in the right hip and 4 months prior to admission the pain became so severe that she was confined to bed. About 6 weeks ago, she noticed weakness and numbness of her right leg followed by similar involvement of her left leg. During this time she exhibited impairment in cerebration and emotional lability. About 2 or 3 weeks before hospitalization both urinary and fecal incontinence developed.

Physical Examination. Her temperature was 99 F., pulse 90, respiration 28, blood pressure 150/70. She was a rather lethargic woman who lay quietly in bed. She did not move her lower extremities. There were bilateral cataracts. A grade 2 systolic murmur was heard over the aortic and pulmonic areas. The lungs were clear. No abnormality was noted on abdominal examination. A dorsal kyphoscoliosis was present. *Neurological Examination:* Her sensorium was clouded and she was not completely oriented. There was complete paralysis of the lower extremities and an absolute sensory level below the fourth thoracic vertebra for all modalities. Deep tendon reflexes were absent in the lower extremities. There was no plantar reflex. Remainder of the examination was not contributory.

Laboratory Studies: Urine showed a specific gravity of 1.024, a pH of 5, and protein 2+; the sediment contained many red blood cells and 2-3 white blood cells per high power field. Blood: Hgb. 10.8 Gm., PCV 35%, WBC 10,500, with 88% seg., 2% monos., 2% juveniles and the remainder lymphocytes. Blood Chemistry: NPN, 30 mg. %; chlorides 100.8 meq/l. Lumbar puncture: The initial pressure was 80-90 mm. of cerebrospinal fluid; upon application of a blood pressure cuff

about the neck, and inflation to 20 mm., then to 40 mm. and 60 mm. of mercury, no rise in cerebrospinal fluid pressure resulted despite the degree of compression of the jugular veins. However, pressure upon the abdomen did cause the pressure to rise in the manometer. The cerebrospinal fluid was slightly xanthochromic, clear, and clotted on standing; it contained 1,272 mg. of protein per 100 cc.; sugar was 60 mg. %; there were 17 wbc/cmm.

DR. SPROFKIN: Dr. Green has ably summarized this problem of an elderly woman with a sensory level at about the T-4 vertebra, and a complete sub-arachnoid block on spinal fluid examination. We shall ask Dr. Francis to describe the findings on X-ray examination.

DR. HERBERT C. FRANCIS: In the upper dorsal spine there is a marked curvature with a partial compression of the 3rd and 4th dorsal vertebrae. The rest of the dorsal spine shows a very marked arthritis of the hypertrophic type with bridging of the interspaces. At numerous levels there are calcific densities in the cartilages between the vertebrae. In the lumbar spine, the second lumbar vertebra shows both a pathological fracture and what I consider to be metastatic malignant changes. In the center of the body in the lateral projection it is seen that the inferior anterior half of the body is elevated and there is an irregular linear translucent line extending downward through the body. There is a generalized haziness of this body suggesting diffuse involvement by a malignant process. In the second sacral segment there is a translucent zone of bone change outlined by a thin calcific border. This has a cyst-like appearance. It cannot be seen in the lateral projection. In the chest there is a shadow in the left base immediately above the diaphragm with an irregular nodular upper border which could be that of a primary malignancy. This chest film is made in the supine position because the patient was unable to attain a better position. The other possibility of course is that the lesion in the base of the lung may also be metastatic as well as the lesion in the lumbar spine. It is not thought that the translucent zone in the second sacral segment is a metastatic tumor.

DR. SPROFKIN: Dr. Francis, do you

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think there is anything about the bone changes that would be at all compatible with a diagnosis of multiple myeloma?

DR. FRANCIS: The lesion in the lung almost certainly rules out multiple myeloma.

DR. SPROFKIN: The problem which this lady presented was one of paraplegia with a high thoracic sensory level. When one sees a person in this age group with the rather abrupt onset of paraplegia one usually thinks first of malignant disease and particularly of metastatic malignancy of the vertebrae. Carcinoma of the lung, breast and prostate, because of their great frequency, are often the sites of the primary malignancy in such cases. The question of therapy always is a vexing one. Certainly in a patient with a rather sudden onset of spinal cord compression one thinks immediately of relieving this compression and occasionally very gratifying results follow laminectomy, particularly when the compression is of brief duration. Here, faced with the certainty of a complete subarachnoid block, the X-ray examination has been most helpful in showing the multiplicity of involvement, and perhaps explains the fact that the reflexes are virtually absent in the lower extremities since there is probably cord compression in the lumbar region as well as in the upper thoracic region. It seems unlikely that we have anything further to offer this woman. Prior to the X-ray study the diagnostic possibility of multiple myeloma was considered because of the absence of any known malignant focus but this would be statistically much less likely. However, in these cases, the blood dyscrasias must be considered, and such disorders as multiple myeloma and Hodgkin's Disease occasionally produce cord compression due to involvement of the epidural space and without demonstrable changes in the vertebrae.

DR. CULLY COBB: I would like to say one or two things about her case from the point of view of therapy of lesions compressing the spinal cord. In general the best results come with lesions that have advanced the most slowly. The patient who has had a slowly progressive syndrome of spinal cord compression over a period of

years and who has finally become totally paraplegic as this lady has, even though she may have been paraplegic for several weeks, may recover to a phenomenal extent when in such a situation a benign tumor can be removed. On the other hand in the cases that progress quite rapidly there is much less likelihood of recovery after removal of the cause of compression, if total paralysis has been present very long. With malignant epidural tumors, of the type this one seems to represent, decompression is indicated if one anticipates a considerable period of survival of the patient in order to avoid the complications that paraplegia brings on. If this decision can be made early much distress can be relieved. Where the lesion is extensive or the lesions multiple, there would be no possible rationale that I can see in undertaking decompression or an attempt at removal of the tumor. The matter of her flaccid paralysis is a point of interest. In human beings the period of spinal shock lasts, as Dr. Sproffkin implied, for several weeks, so that with a very quickly progressive lesion above the lumbar enlargement of the cord one could expect a flaccid paralysis at first, although after three or four weeks some spasticity at least, I should think, would begin to appear.

DR. WILLIAM F. ORR: I would think we might consider the second lesion as a possible involvement of the cauda equina which might also cause the loss of reflexes in the legs. There may be extensive damage not only to the spinal cord but also within the spinal cord. The patient may have both an intramedullary lesion and one within the spinal canal. Disturbance of the cauda equina might explain the loss of reflexes as well as spinal cord shock.

DR. COBB: Epidural compression in the region of the cauda equina might cause the same disturbance as an intradural one. I don't think you have to postulate an intradural lesion even though the lesion may be situated at the site of the cauda equina.

DR. WILLIAM F. MEACHAM: From the standpoint of the management of this case, I think there are just two things to consider. This 70 year old lady is unhappy, ridden with malignancy and paraplegic. We

would have the same result after doing a laminectomy, leaving her an unhappy, malignancy riddled, 70 year old lady with paraplegia. If there is any question of surgical management here, I would vote against any decompressive laminectomy since I think it has nothing to offer her. I believe it is academic whether she has spinal metastases and whether they are intradural or epidural. It doesn't make much difference in this instance and from what I have heard here it seems she probably has a great deal of neurologic involvement of the lower segments, although her sensory level is at T-4. She certainly has cauda equina compression whether intradural or extradural. Given two intraspinal lesions of a malignant nature and other widespread areas of metastasis, I would think a surgical attempt to decompress her spinal cord and cauda equina is futile.

DR. PHILLIP DODGE: I would be willing to accept the continued loss of spinal reflexes as late as four weeks after total paraplegia, which developed abruptly, as being within the limits of the time of spinal shock. I think it may last even longer than that in man and may come back much more rapidly, particularly if there is some degree of sensation below the cord level as may occur with incomplete lesions. Here I gather there is a complete physiological lesion. I would agree with those who postulate extradural compression on the basis of a tumor which in these cases usually involves first the vertebral body and then either compresses the body and extends into the epidural space, or simply compresses the body and produces the same result without actual invasion of the epidural space. The findings of cells in the spinal fluid is of some interest and favors those who suspect that there is some intradural extension of tumor, although I would be unwilling to make that diagnosis on just that one finding. Apparently this patient has been going downhill mentally rather rapidly in the last few months, and it suggests that in addition to involvement of the neuraxis in the dorsal region this patient may also have multiple metastases to the cerebrum. This patient may not show just simple senile dementia, though that is an adequate explanation of

what I see of that aspect of the clinical picture. I have been wondering a bit whether, on taking the other side, there is anything one can offer this woman by surgery. I recall some examples of people who have had malignancy seemingly advanced, and who have not had an operation. Several months, or even a year or two later, they have been completely paraplegic whereas previously they had been only partially paraplegic. I think sometimes it is easier for nursing care if the patient can get some function back although I agree that it does appear quite hopeless in this case. I believe one should not give up on malignant lesions of the epidural space.

DR. ORR: Dr. Dodge, don't you think if this woman had cerebral metastases with a tumor apparently growing as rapidly as this one is that she would have choked discs?

DR. DODGE: I don't know. I have seen several examples of multiple small metastases in which mental changes have been the only signs, with at times some facile grasping or something of that sort, but without choking of the discs. It wouldn't surprise me at all if there were cerebral metastases. As I said, I don't think it is necessary to put those in as part of our story but they offer another possibility in diagnosis.

DR. PHILIP NORMAN: The second case is that of Mr. D., who is a 32 year old truck driver whose symptoms started approximately 16 years ago at the age of 17 years. At that time he developed an ulcer at the base of the right great toe and shortly thereafter an ulcer at the base of the left great toe. These failed to heal and his doctor amputated first the right and then the left great toe. Approximately 14 years ago the patient developed chronic ulcers at the base of the metatarsals and these would tend to heal slightly and then would break down again over a period of about 4 years. He was first seen here 10 years ago, 3 or 4 months after he had developed pain and swelling of the right ankle; he entered the hospital with an unusually enlarged, sore, painful non-functioning ankle.

The chart of that admission contains photographs of the ankles. At that time he was seen by Dr. Brooks who pointed out that apparently the etiology of the patient's difficulty was the loss of pain sensation over the lower extremities, from about the knee down on the right and from the mid-calf on the left side. The patient had absent knee jerks and ankle jerks at that time. It was suggested that the disorder of the right ankle

constituted a Charcot joint and that the patient's difficulty was neuropathic in origin. Dr. Brooks made a diagnosis of syringomyelia. The patient had a below-the-knee amputation on the right side and was discharged.

About 9 months later he entered the hospital again, having developed a Charcot ankle on the left, and had a below-knee amputation on that side. He was provided with prostheses. He learned to use these and got around well for the next 9 years. He worked as a truck driver and was able to make his own living.

His current admission was occasioned by the fact that 9 weeks ago he rather suddenly developed severe pain in the lumbar area of the back, the pain being intensified by motion. He was treated by his doctor for urinary tract infection but continued to have severe pain in his back and was confined to his bed because of pain.

Therefore he was admitted to this hospital on the Surgical Service. It is important to add that the family history is entirely negative, there having been no other neurological disease in the family. This patient also denies ever having any affection of the upper extremities. There is no history of painless burns nor has he noticed any numbness of the upper extremities. For that matter he was aware of no numbness over the feet before the development of his difficulties 15 years ago.

Physical Examination: The patient has a mild dorsal scoliosis and a rather severe lumbar kyphosis which was not noted on his first admission 10 years ago. There is a ventral hernia from an old appendectomy scar and a small draining sinus in the left lower quadrant of the abdomen dating from a spontaneous rupture of an abscess after his appendectomy. The principal findings with which we are concerned are neurological. The patient has absence of pain sensation from the knee down as far as we can measure and there is a patchy loss of pain sensation over the hand. At the same time he has considerable loss of heat and cold sensation up to the mid-forearm in a patchy fashion bilaterally, and there is loss of heat and cold discrimination, from the knee down over the lower extremities. There is no loss of sensation over the trunk or back nor over the sacral dermatomes. The reflexes are equal and physiological and the abdominal and cremasteric reflexes are present. *Laboratory Studies:* The urine is normal. Hgb. is 9 Gm.; there is a reversal of the A/G ratio with 3.0 Gm. % of albumin and 3.9 Gm. % globulin. A lumbar puncture was done which revealed normal manometrics and pressure, 20 cells of an unspecified type per cmm. and a spinal fluid protein of 133 mg. per cent.

DR. SPROFKIN: As Dr. Norman pointed out, this is another case which attests to Dr. Barney Brooks' remarkable capabilities both as a surgeon and a diagnostician. When he presented this patient at ward

rounds, some ten years ago, he discussed in a very masterly fashion the causes of neuropathic changes in joints, and at that time, he referred to such relevant diseases as diabetes, tabes dorsalis, and syringomyelia.

This patient's dissociated sensory change, involving only a few segments in the lower cervical cord to produce this type of picture, having some involvement of the lumbosacral cord to produce his original symptoms, is often confused with a peripheral neuropathy because of the short space over which the cord change occurs. Indeed this disorder, known as Morvan's Disease, was at one time attributed to leprosy but is now generally thought to be a type of syringomyelia. Others have held that there is a neuritic element also present in Morvan's Disease. This patient's elevated spinal fluid protein might well suggest the possibility of a neuritic change although an elevated spinal fluid protein is possible in syringomyelia, particularly when there is a block due to cyst formation. At the time when Dr. Brooks was first discussing this problem and made the diagnosis of syringomyelia, Dr. Francis had also come to this conclusion independently from a study of the X-ray films, and since he is present today, we shall ask him to discuss the radiographic changes in these neuropathic anarthropathies.

DR. FRANCIS: The examination of the foot in 1944 shows extensive destructive changes in the tarsal bones and very unusual irregular appearances of some of the borders of bone other than those in the tarsal regions themselves. Here, for example, you see a large fragment of bone is missing and still a considerable amount of reproductive and calcific changes cut away from the bones in the soft tissues. Here in the anteroposterior view of the ankle, we see enormous soft tissues swelling and many isolated fragments of calcium and/or bone of variable size scattered quite some distance from the main bone segment. This roughening, irregular bone margin with partial destruction and calcific changes both in the bone, around the bone and even out into the soft tissues is very frequently associated with a neuropathic joint. The most common causes we, as radiologists, think of in such circumstances are either syphilis or syring-

gomyelia. There are a couple of other points here which are not compatible to my mind with neuropathic joint alone. The tremendous amount of the soft tissue swelling favors an inflammatory process superimposed on the old change which has been there for some years. When the patient came in on this occasion, these films of the lumbar spine were made at night, as an emergency, without knowledge of the background. In the lumbar spine, at the second and third lumbar vertebrae, we see a narrowed interspace. The vertical height of both the second and third bodies are decreased and particularly in the third it is markedly decreased anteriorly so that the body is tilted upward making a very wide space between the third and fourth and very narrow space between the second and third, whereas that between the first and second is normal. There is a marked degree of sclerosing change in the adjacent parts of both bodies. Here there is little evidence of extraneous calcification in the soft tissues around the spine. In the fourth and fifth lumbar vertebrae on the anterior-superior margins there is fragmentation of the edges of the bodies. Their upper corners are split off and show calcific density between the fragments and the bodies, of a hypertrophic type and some also on the borders of the bodies particularly in the fifth lumbar. In these days we rarely see neuropathic lesions of the spine but they were not uncommon when syphilitic lesions were considerably more frequent. This change is compatible with what we call the Charcot spine. Now we would be more apt to think of chronic tuberculosis as the most likely possibility, without knowing the history. At the present time, the examination of the right knee, which was formerly normal, shows changes of the neuropathic joint. On the lateral border of the tibial condyle an irregular destruction is seen with a large bony and calcific separate fragment in the soft tissue area around it. The border of the lateral condyle of the femur also shows an irregular destructive change and increased density of its border. The left knee still looks perfectly normal.

This is a rare case at the present day. Syringomyelia as a cause of neuropathic

joint is not nearly as frequent as the Charcot joint was some years ago. (When I say Charcot I mean specifically that due to *tabes dorsalis*.) We did on rare occasion see the neuropathic joint of syringomyelia and this case seems to be one of that group.

DR. DODGE: To be quite historical about it, Morvan wrote an article on dorsal kyphosis and scoliosis occurring in his syndrome in 1887, so that it has been recognized for a long time. While no great attention has been paid to the radiological changes in syringomyelia, practically all series of cases will mention that the patient had a dorsal kyphosis or scoliosis, or a combination of the two. And some of the more recent descriptions of Morvan's Disease say that changes in the spine are very common particularly in this form of syringomyelia. In several series of patients with syringomyelia, mention is made that the deformities of the spine usually result as a late occurrence in this disease if the patient is followed long enough. So, while ordinarily we do not pay much attention to spinal changes in syringomyelia, if one looks for them one finds them rather commonly. As to whether these lesions are destructive or not, the most common finding as Dr. Francis has already pointed out is hypertrophic change and one sees a lot of spurring and lipping; such things are almost routine in cases of syringomyelia. The destructive changes which are apparently more serious probably are less common.

DR. ORR: I agree that part of the syndrome of syringomyelia consists of changes in the vertebrae in terms of kyphosis, but I never thought of them in terms of a Charcot spine and I didn't know that they were considered as such. I'd like to ask Dr. Francis whether the kyphosis that occurs so frequently in syringomyelia is in any way related to the Charcot spine?

DR. FRANCIS: Not the changes like this, where you see the narrowing of the bodies and marked loss of the adjacent borders of the body with sclerosing and marked hypertrophic changes. What we are apt to see more frequently in syringomyelia are the changes in the arches where the syrinx is gradually enlarging and producing pres-

sure changes on the pedicles and the laminae.

DR. NORMAN: I think it should be mentioned, apropos of this patient, that the possibility of tuberculosis of the spine was very carefully considered by the orthopedic service and they carried tuberculin testing down to a concentration of 1:100 with negative results. They feel that this rules out bone tuberculosis with fairly good certainty.

DR. SPROFKIN: In summary, I think it should be mentioned that this is not the usual clinical neurological picture which one associates with syringomyelia since the involvement, the sensory dissociation, is all distal. It has been suggested by Dr. Dodge that this onset with perforating ulcers and the joint changes are reminiscent of the cases of neuropathy which had been reported by Dr. Denny-Brown. Again, it must be remembered that the etiology of Morvan's Disease has been the subject of considerable discussion through the years and the possible importance of the neurotic element can-

not be ignored. As to the basic etiology of these joint changes in neurological diseases, one point of view is that repeated trauma to a joint which has been deprived of its proprioceptive sensation forms the basis of this arthropathy. I don't know how Dr. Francis feels about the traumatic aspect of the etiology of Charcot joints. Do you think trauma plays a role here?

DR. FRANCIS: Yes, I think trauma definitely plays a part. When neuropathic changes occur in bones and more trauma is added, the condensation and spurring really becomes very marked and large stalactites form in the affected parts. This patient lacks the marked degree of hypertrophic spurring ordinarily exhibited in the lumbar spine in the neuropathic joint because it has not been of long enough duration. That in the ankle, however, is pretty typical of changes that have been present for a long time, getting calcific bony deposits scattered in the soft tissues around the joint.

The President's Page

OUR VOLUNTARY PREPAYMENT PLANS



DR. PATTERSON

First, let us urge all our members to study carefully President Eisenhower's Health Message to Congress delivered January 18th. As a follow-up, we also recommend that they read our President-elect Martin's statement of January 28th

before the Committee on Interstate and Foreign Commerce. Space will not permit us here to go into detail; only a few significant points can be emphasized.

President Eisenhower first stresses the fact that the subject of health ranks high in the concerns of our government for the human problems of our citizens. Further on, he voiced one of the points in our "Tennessee Ten" that health is everybody's responsibility when he attributes the rapid progress toward better health to the teamwork and partnership of various groups of dedicated people. This in itself implies the answer to the question we have heard asked so often—namely, what is the Medical Profession doing to solve our health problems? Our President-elect Martin goes into detail to answer this question and to show how our profession is assuming a vital role in this teamwork and partnership.

President Eisenhower next points out that two of the key problems in the field of health are the distribution of medical facilities and the costs of medical care. At the same time he assures us that in solving these problems and in committing ourselves to certain national health goals, we must be careful and far-sighted that we preserve freedom, consent, and individual responsibility in our medical care program. He also insists that we reject the socialization of medicine, and that the States use greater initiative and take more responsibility. His specific recommendations for the distribution of medical facilities are in keeping with the present activities of our Tennessee Med-

ical Foundation, and with similar projects carried on by the medical associations of several of our sister States. His answer to the question of meeting medical costs is for most of our people to provide themselves the resources through participation in voluntary health insurance plans. This also is in keeping with the program sponsored by our Association.

Our President, however, recognizes the limitation of our present prepayment plans and urged that they be made available to more people and that the benefits be broadened. We of the profession realize this most keenly and, as ways and means can be found to accomplish this end, we feel that the partnership and team-work will not be weakened by lack of full cooperation on our part.

How does our present Tennessee Plan fit into this proposed program? Many say that it is inadequate in several ways. First, they claim that the attitude of too many people toward this plan is wrong. The purpose of this plan is to protect the patient against economic stress, which may vary all the way from inconvenience to catastrophe. Too many people use it as a means of paying small surgical fees and for short stays in hospitals for minor ailments. It costs the insurance carrier about three dollars to process a claim. All this only serves to over-crowd many of our hospitals and to keep premium rates high. How to avoid this? Many feel that to belabor the profession for sending patients with minor ailments into the hospitals is not the answer; they feel that a deductible clause should be inserted into these policies. Some claim that sufficient effort is not being made to include medical cases in these plans and that actuarial uncertainties involved in medical cases are not given proper study. There are those who feel that the limits of the fees could be readjusted so as to include more protection for the real catastrophic illness. The fee schedules, many claim, is based on the operations commonly done two decades ago and do not include a great

number of the highly complicated procedures which recent advances and long special training now make possible. Too many of our highly specialized members have not signed up for the plan for this reason. Many also claim that too many patients are made to believe that they have much more coverage than they actually get. The large print in the policies that gives them benefits is much more easily understood than the small print that takes the benefits away. Many, too, feel that the effort is not being made in many cases to include the smaller groups and to organize rural groups so that they could be brought into the plan.

Let us give serious thoughts to these important and vital questions. Let us as physicians see to it that the plans are not ex-

ploited by patients who do not understand the purpose of the plans. Let us not exploit them ourselves to increase the income. Let us hope that the private and non-profit carriers remember that the object of the plans is first to serve the people and that making money out of them is secondary. Let us also hope that the plans can be adjusted to the needs as we gain experience and understanding. Lastly, let us remember that plans are not automatic and will not of themselves work. We must make them work; team-work and partnership are essential.

A. M. Patterson.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly
Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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MARCH, 1954

EDITORIAL

THE SCIENTIFIC PROGRAM OF THE 1954 ANNUAL SESSION

This issue contains the program of the scientific meetings of the Annual Session. The program continues the experiment decided upon last year by the Board of Trustees at the suggestion of the Committee on Scientific Work. Thus the scientific program of the Tennessee State Medical Association will occupy only the forenoons of the three days devoted to scientific meetings. This will leave the afternoons free for meetings of groups having special interests.

Formerly the members of the House of Delegates complained that meetings of this body coincided with scientific sessions thereby precluding attendance at these sessions. The former custom of specialty meetings on Monday provided no stimulus for many of the specialists to stay over for the sessions of the Tennessee State Medical Association. The present pattern of program corrects these weaknesses.

The trend toward a splintering of the State Association through group interests is dangerous to the whole profession. The

component county societies, the State Association and the American Medical Association provide the only organizations which can on the one hand offer a united front in opposition to whatever in the long run will be harmful to the people of this Country, medically speaking, and on the other hand initiate constructive programs for the good of the populace and the profession. The constructive program of Public Service of the Tennessee State Medical Association has focussed the eyes of many in organized medicine upon our State. This can continue and expand only through the whole-hearted support of the Association by all its members.

This is the reason the Committee on Scientific Work has faced the ever growing tendency toward the splintering of professional interests and has provided for the afternoon programs of the specialty groups so that they may meet with the State Medical Association. The general sessions of the Association must remain the core of the program, indicative of the common ground upon which every member of the profession must stand for the reasons already given.

R. H. K.



UNDERGRADUATE EDUCATION OF THE FUTURE

In a series of editorials an attempt has been made to review and evaluate trends of recent years, to summarize them and to predict their effect upon the "Practice of Medicine in the Future."¹ Having made these predictions your editor naturally turned to the inevitable changes in graduate education which all of us working in hospitals must face.²

Finally, it seems appropriate to see what the future holds for undergraduate education under the circumstances envisaged in the previous editorials. Curiously the average doctor gives little thought to undergraduate medical education. Having been handed his diploma the new M.D. turns his back on the official who handed it to him and more often than not turns his back on

¹Editorial. "Practice of Medicine in the Future," J. Tenn. M. A. 47:31, 1954.

²Editorial. "Graduate Education of the Future," J. Tenn. M. A. 47:78, 1954.

his Alma Mater as well. As his memory of the medical college fades it becomes an ivory tower to whose yards and halls he occasionally returns for a class reunion to greet classmates of the 'good old days.' A quarter of a century after graduation he may develop a temporary interest in the 'old school' or some other one as he matriculates his son as a medical student. But even then his interest may be superficial and does not take into account the problems facing the medical educators and his son.

The shortage of preclinical teachers because of inadequate salaries has been alluded to in these columns. Several times the financial plight of the medical schools, especially of that fifty per cent which are not state supported, has been emphasized. By those discussions the readers have been made acquainted with the threat of Federal subsidy so feared by medical educators, the American Medical Association and other organizations. These columns have described the activities of the National Fund for Medical Education and American Medical Education Foundation in their efforts to collect monies and to disburse them to the medical schools so they may stave off the day of Federal subsidy. The physician has been asked to join leaders in business, labor, industry and organized medicine in this, possibly the last stand of medical education as a free enterprise.

Aside from these financial matters which put a heavy burden on the medical educator, what changes will occur before your son enters his clinical experience as a medical student ten years hence? The readers of this editorial will have in most instances had their experience as clinical clerks with patients of the medically indigent class, on the wards or in the clinics of the university, charitable or public hospital. But the picture has changed and will change more for the undergraduate student as well as for the graduate student.

A number of factors have conspired to bring about these changes and with them a paucity of indigent patients for student assignments. First, the development of the re-vamped Veterans Administration Hospi-

tals after World War II has taken out of 'circulation' many medically indigent who would otherwise have appeared on teaching wards. Secondly, the privately endowed schools and hospitals have faced rising costs from five or six dollars a day per bed to twenty or more dollars a day. (This puts the private medical school with its endowed university hospital in the same category as the person trying to live on a small pension in these days of inflation.) Thirdly, third party contracts, i.e., hospitalization and health insurance plans, have placed many potentially medically indigent in the private patient category. Fourthly, governmental rehabilitation funds provide for the medical care of the disabled on a private patient basis.

The reduction of medically indigent clinical material has shown its effects more in medical schools of the industrial urban areas of the North than in the southern states as of this date. But as has been indicated previously, unless national catastrophe strikes, with its attendant socialization, the growth of the third party contracts is inevitable, leaving only the irreducible minimum of the truly indigent for undergraduate and graduate education. This number will be woefully inadequate in the teaching centers.

The privately endowed teaching hospital must welcome pay patients in these inflationary times to keep its doors open. Even the state supported university hospitals, with the present terrific over-head, cannot turn away pay patients. This situation makes it probable that the medical student of the future will have more private patients assigned him than public charges. What are the implications and inherent difficulties in this type of clerkship? (1) It may be hard on the patient, especially a sick one. To have an inept third year student take a history and do an examination in addition to those of the interne, assistant resident and attending man may be a hardship. (2) The attending man on the private case may not be a teacher, having no inclination in this direction,—then the clinical clerk suffers. (3) If the teaching on private pa-

tients is delegated to the resident or an enthusiastic young full-time teacher, who has not learned as yet the basic facts of human relationships and professional ethics, discussions on diagnosis and therapy within earshot of the patient may lead to serious misunderstanding and misinterpretations on the part of anxious relatives or patients,—then the attending man suffers.

These are the problems which do arise, and will arise still more in the future when the undergraduate clinical clerkship involves many private patients. Before such a program can work smoothly there will need be much reorientation in the thinking and actions of resident, full-time and attending staff members.

Some educators imply that if private patients must supply much of the clinical material needed for undergraduate teaching, and if the private attending man does not cooperate or fit into the picture, the teaching hospital and its staff may need to set up a private clinic in order to control its patients for teaching purposes. They say that not only may the teaching be done more smoothly, but the income from fees may tip the scales financially so that the medical school does not need to close its doors. In a large community like Chicago such a clinic (University of Chicago) enrolls so few patients out of the total that its activities are not felt by the local profession. In a smaller community, such private practice by a university clinic has serious repercussions since it is in direct competition with local specialists.

The practice of the future poses questions for the medical educator and for the next generation of doctors. First, who will finance medical education and, secondly, will there be enough medically indigent patients for the clinical clerkship? These are thoughts for all members of the medical profession, whether engaged in teaching or not. Not only should the doctor contribute to the costs of medical education, but he should see it his duty to supply ample clinical material to make the next generation of doctors, among whom may be his sons, good ones.

R. H. K.

SPECIAL SECTION
SCIENTIFIC PROGRAM
OF THE 119TH ANNUAL SESSIONS
OF THE
TENNESSEE STATE MEDICAL
ASSOCIATION
MAIN BALLROOM
THE MAXWELL HOUSE
MONDAY, APRIL 19, 1954

9:25

Treatment of Injuries to the Urinary Tract

By: DR. GILBERT M. ROBERTS, Chattanooga

Discussed by: DR. OSCAR CARTER, Nashville

9:50

The Treatment of Burns in the Small Hospital

By: DR. CHARLES R. ZIRKLE, Knoxville

Discussed by: DR. JOHN KESTERSON, Knoxville

Visit Exhibits

10:45

Possible Injurious Effects from Diagnostic Fluoroscopic Roentgenography

By: DR. JOSEPH M. IVIE, Nashville

Discussed by: DR. BEN R. MAYES, Nashville

11:10

Symposium—Pancreatitis: Its Diagnosis and Management

Diagnosis

DR. JOHN W. ADAMS, JR., Chattanooga

Medical Management

DR. R. C. KIMBROUGH, JR., Knoxville

Surgical Management

DR. RICHARD V. FLETCHER, Chattanooga

TUESDAY, APRIL 20, 1954

9:00

Orthopedic Procedures for the General Practitioner

By: DR. ROBERT C. ROBERTSON, Chattanooga

Discussed by: DR. SAMUEL B. PREVO, Nashville

9:25

Physical Therapy in Office Practice

By: DR. LEWIS P. BRITT, Memphis

Discussed by: DR. FLORENCE I. MAHONEY, Memphis

9:50

Treatment of Rheumatoid Arthritis

By: DR. WILLIAM C. CHANEY, Memphis

Discussed by: DR. HENRY GOTTEN, Memphis

Visit Exhibits

10:45

The Management of the Paraplegic Patient

By: DR. ARNOLD M. MEIROWSKY, Nashville

Discussed by: DR. R. EUSTACE SEMMES, Memphis

11:10

Modern Concept of Management of Otitis Media in Infants and Children

By: DR. WALTON W. HARRISON, Jackson

Discussed by: DR. JAMES C. OVERALL, Nashville

11:35

The Care of the Physician's Skin

By: DR. FRANK WITHERSPOON, Nashville

Discussed by: DR. ROBERT N. BUCHANAN, JR.,
Nashville**WEDNESDAY, APRIL 21, 1954**

9:00

Clinical Interpretation of Bone Marrow Studies

By: DR. GOULD A. ANDREWS, Oak Ridge

Discussed by: DR. ROBERT HARTMAN, Nashville

9:25

Present Day Treatment of Tuberculosis

By: DR. E. P. BOWERMAN, Memphis

Discussed by: DR. P. M. HUGGIN, Knoxville

9:50

Carcinoma of the Uterine Cervix: Its Detection by Cytological Survey

By: DR. CYRUS C. ERICKSON, Memphis

Discussed by: DR. J. CASH KING, Memphis

Visit Exhibits

10:45

The Abuse of Laboratory Procedures: With Special Reference to the Hospitalized Patient

By: DR. MERLIN L. TRUMBULL, Memphis

Discussed by: DR. JOHN D. HUGHES, Memphis

11:10

Symposium—Diseases of the Thyroid Gland**Radioiodine in Diagnosis and Treatment**

DR. B. T. TOWERY, Nashville

The Medical Management

DR. JOHN D. HUGHES, Memphis

The Surgical Management

DR. BRUCE McCAMPBELL, Knoxville

★

TENNESSEE STATE PEDIATRIC SOCIETY**MONDAY, APRIL 19, 1954**

1:30 to 2:15 P.M.

Vanderbilt University Hospital Amphitheater
Presented by the Pediatric Department, Vanderbilt
University School of Medicine

2:15 to 2:45 P.M.

The Disease Spectrum of Infectious Mononucleosis
Summary of 56 Vanderbilt Hospital Cases

2:45 to 3:00 P.M.

Speech and Hearing Methods and Techniques

DR. FREEMAN McCONNELL, Director,

Speech and Hearing Foundation

Intermission

3:00 to 3:30 P.M.

Acute Infectious Reticuloendotheliosis**(Letterer Siew) Report of 16 Cases**

DR. H. D. RILEY and DR. RANDOLPH BATSON

3:30 to 4:30 P.M.

Clinical Pathological Conference

By Department of Pediatrics and Pathology

TUESDAY, APRIL 19, 1954

Parlors A and B, The Maxwell House

1:30 to 2:00 P.M.

Normal Anatomical Variants, Simulating Orthopedic Disease

DR. FREDERIC N. SILVERMAN, Director

Department of Roentgenology

Children's Hospital, Cincinnati

2:00 to 2:10 P.M.

Discussion

2:10 to 2:40 P.M.

Extra-Uterine Retention of Fetal Positions

DR. CARL E. BADGLEY

Department of Orthopedics

University of Michigan School of Medicine, Ann
Arbor.

2:40 to 2:50 P.M.

Discussion

2:50 to 3:05 P.M.

Intermission

3:05 to 3:35 P.M.

1) Non-Rachitic Bow Legs**2) Unrecognized Skeletal Trauma**

DR. FREDERIC SILVERMAN

3:35 to 3:45 P.M.

Discussion

3:45 to 4:15 P.M.

The Fibro-elastic Diathesis's, with the Normal Characteristics

DR. CARL BADGLEY

4:15 to 4:25 P.M.

Discussion

4:30 P.M.

Business Meeting

★

TENNESSEE THORACIC SOCIETY**WEDNESDAY, APRIL 21, 1954**

Old South Room

The Maxwell House

12:00 Noon

Luncheon

1:30 P.M.

Scientific Program:**Diagnosis and Treatment of Pulmonary Nodules**

DR. FOSTER HAMPTON, JR., Chattanooga, Tenn.

Spontaneous Pneumothorax

DR. SHELDON E. DOMM, Knoxville, Tenn.

The Treatment of Carcinoma of the Esophagus

DR. FELIX HUGHES

DR. JOHN FOX

DR. JOHN KEHNE

Kennedy General VA Hospital, Memphis, Tenn.

Rupture of the Esophagus

DR. DOUGLAS RIDDELL, Nashville, Tenn.

★

TENNESSEE DIABETES ASSOCIATION**TUESDAY, APRIL 20, 1954**

Parlor C

Maxwell House

2:00 P.M.

Scientific Sessions

"Modern Concepts of Diabetic Acidosis"

ADDISON B. SCOVILLE, JR., M.D., Nashville

"Diagnosis in Juvenile Diabetes"

ALBERT S. EASLEY, M.D., Chattanooga

"Insulin Resistance"

ROBERT BRIMI, M.D., Knoxville

"Atherosclerosis in Diabetes"

ROBERT ACKERMAN, M.D., Memphis

6:30 P.M.

Fellowship Hour

7:30 P.M.

Dinner**Dinner Speaker**

LEON SMELO, M.D., Birmingham

**TENNESSEE PATHOLOGICAL SOCIETY**

WEDNESDAY, APRIL 21, 1954

Parlor C

The Maxwell House

2:00 P.M.

Scientific Session**The Problem of Sudden and Unexpected Death with Particular Emphasis on the Role of the Coronary Arteries**

DR. STANLEY H. DURLACHER

Louisiana State University School of Medicine
New Orleans**TENNESSEE RADIOLOGICAL SOCIETY**

MONDAY, APRIL 19, 1954

Assembly Room

Noel Hotel

12:00 Noon

Luncheon**Scientific Sessions****TENNESSEE STATE ACADEMY OF
OPHTHALMOLOGY AND
OTOLARYNGOLOGY**

MONDAY, APRIL 19, 1954

Old South Room

Maxwell House Hotel

9:00 A.M.

**Surgery of the Inferior Oblique Muscle. Kodo-
chrome Slides of Cases**

DR. ROLAND H. MYERS, Memphis, Tenn.

Discussor: DR. RALPH O. RYCHENER, Memphis,
Tenn.

9:30 A.M.

**The Use of Thyroid in the Treatment of Conver-
gence Excess**

DR. WALTER H. BENEDICT, Knoxville, Tenn.

Discussor: DR. PHILIP M. LEWIS, Memphis, Tenn.

10:00 A.M.

**Classification and Adenotonsillectomy as Minor
Surgery**

DR. CHARLES E. LONG, Memphis, Tenn.

Discussor: DR. WILLIAM G. KENNON, JR., Nash-
ville, Tenn.

10:30 A.M.

Case Report—Unilateral Exophthalmus

DR. IRA LEE ARNOLD, Chattanooga, Tenn.

Discussor: DR. THOMAS M. JACKSON, Chattanoo-
ga, Tenn.

11:00 A.M.

**The Complications of the Surgery for Retinal De-
tachments**

DR. PHILIP M. LEWIS, Memphis, Tenn.

Discussors: DR. RALPH O. RYCHENER, Memphis,
Tenn.DR. ROBERT E. SULLIVAN, Nashville,
Tenn.

11:30 A.M.

**Discussion of Various Implants Used in Rhino-
plasty**

DR. GREER RICKETSON, Nashville, Tenn.

12:00 Noon

**Luncheon—Parlors A and B, Maxwell House
Nashville Society—Host**

1:30 P.M.

Rehabilitation and the Ophthalmologist

MR. W. J. FERRELL, Chattanooga, Tenn.

Discussors: DR. ROBERT SULLIVAN, Nashville,
Tenn.DR. J. WESLEY MCKINNEY, Memphis,
Tenn.

MR. MASON BRANDON

2:00 P.M.

Case Report—A Case of Unsuspected Infection

DR. C. D. BLASSINGAME, Memphis, Tenn.

Discussor: DR. CHARLES E. LONG, Memphis, Tenn.

2:30 P.M.

Case Report—Metastatic Tumors to the Larynx

DR. CLYDE ALLEY, Nashville, Tenn.

Discussor: DR. GUY M. MANESS, Nashville, Tenn.

3:00 P.M.

A Case Report of Optic Atrophy from Sinusitis

DR. M. B. WEISBAUM, Memphis, Tenn.

Discussors: DR. CHARLES E. LONG, Memphis,
Tenn.

DR. JOHN R. RICE, Nashville, Tenn.

4:00 P.M.

Business Session

5:00 P.M.

**Cocktail Party—Following Business Session—Par-
lors A and B, Maxwell House**

Nashville Society—Host

6:00 P.M.

Dinner—Dutch—Maxwell House Hotel**TENNESSE CHAPTER
AMERICAN COLLEGE OF SURGEONS
BALLROOM, MAXWELL HOUSE**

MONDAY, APRIL 19—2-5 P.M.

Surgery of the Spleen

GENE KISTLER, M.D., Chattanooga

Cerebral and Pulmonary Fat Embolism Following Long Bone Fractures

CULLY COBB, M.D., Nashville

Annular Pancreas Producing Duodenal Obstruction

HARWELL WILSON, M.D., Carthage.

Symposium on Bones and Trauma

Moderator: George K. Carpenter, M.D., Nashville
Panelists:

The Immediate Management of the Injured

By: MOORE MOORE, JR., M.D., Memphis

The Role of the Neurosurgeon in the Fracture Patient with Neurosurgical Complications

By: M. FRANK TURNER, M.D., Knoxville

The Diagnosis and Treatment of Thoracic Injuries Complicating Fractures

By: ROLLIN A. DANIEL, JR., M.D., Nashville

Intra-Abdominal Injuries Complicating Other Trauma

By: HENRY T. KIRBY-SMITH, M.D., Sewanee

The Definitive Care of Fractures in Patients Who Are Otherwise Severely Injured

By THOMAS L. WARING, M.D., Memphis

Summary

ROBERT C. ROBERTSON, M.D., Chattanooga

TUESDAY, APRIL 20—2-5 P.M.

Ballroom, Maxwell House

Some Problems of Gastric Surgery

C. L. CHUMLEY, M.D., Knoxville

Extra Hepatic Biliary Surgery

(An Analytical Survey of 1,051 Cases)

CHARLES C. TRABUE IV, M.D., Nashville

BART WOOLDRIDGE, M.D., Nashville (by invitation)

Hand Injuries: Some Early and Late Problems

J. MALCOLME ASTE, M.D., Memphis

Symposium on The Functional Approach to Pelvic Surgery

Moderator: JOHN C. BURCH, M.D., Nashville.

Panelists: A. W. DIDDLE, M.D., Knoxville

HARRY JONES, M.D., Chattanooga

PHIL C. SCHREIER, M.D., Memphis

Business Session, Election and Installation of Officers

L. W. EDWARDS, M.D., Nashville, Chapter President, Presiding

EVENING PROGRAM

Old South Room, Maxwell House, 7:30 P.M.

Annual Banquet for members and wives to hear Presidential Guest Speaker, HENRY T. BAHNSON, M.D., Associate Professor of Surgery, Johns Hopkins University School of Medicine, speaking on Aortic Aneurysm.



TENNESSEE ACADEMY OF GENERAL PRACTICE*

MONDAY, APRIL 19, 1954

1:30-5:00 P.M.

Ballroom, Noel Hotel

Medical Essay, Illustrated

"Intestinal Polyps"

W. M. HAMILTON, M.D., and M. D. INGRAM, JR., Nashville

Symposium on Obstetrics

"Toxemia of Pregnancy"

Moderator: FRANK E. WHITACRE, M.D., Nashville

Panelists: JOHN Q. ADAMS, M.D., Memphis—
"Disturbances in Physiology"

ROBERT CHALFANT, M.D., Nashville—

"Associated Pathology"

OLIVER DELOZIER, M.D., Knoxville—

"Modern Treatment"

Summary

FRANK E. WHITACRE, M.D., Nashville

Symposium on Anesthesiology

Moderator: HARRY MOORE, M.D., Nashville

Panelists: B. H. ROBBINS, M.D., Nashville—
"Pre and Post Anesthesia Care"

JOHN JARRELL, M.D., Nashville—

"Practical Aspects of Obstetrics, Anesthesia and Analgesia"

ADOLPHUS BRAY, M.D., Franklin—

"The Scope of Anesthesiology in General Practice"

TUESDAY, APRIL 20, 1954

7:30 P.M.

Annual Banquet, Elections, Installation, Presidential Guest Speaker R. B. CHRISMAN, M.D., Miami, Florida, First Chairman of The Florida Committee for Better Government, Nemesis of Former U. S. Senator CLAUDE PEPPER.



TENNESSEE ACADEMY OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

WEDNESDAY, APRIL 21, 1954

Parlors A and B—Luncheon—Maxwell House
Scientific Sessions



WOMAN'S AUXILIARY TO THE TENNESSEE STATE MEDICAL ASSOCIATION

APRIL 19-20-21

NOEL HOTEL

MONDAY

9:00 A.M.

Registration—Noel Lobby

10:00 A.M.

Pre-Convention Board Meeting

12:30 P.M.

Board Luncheon and Adjournment

TUESDAY

10:00 A.M.

Business Session of Entire Auxiliary—Noel Assembly Room

Guest Speaker—MRS. LEO J. SCHAEFER, President, Woman's Auxiliary to the American Medical Association

12:30-1:00 P.M.

Refreshment Hour—Noel Ballroom

1:00 P.M.

Luncheon—Noel Ballroom**Early Afternoon Adjournment****WEDNESDAY**

10:00 A.M.

Final Business Session, Resolutions, Etc.—Assembly Room

Guest Speaker—MRS. GEORGE FELDNER, President, Woman's Auxiliary to the Southern Medical Association

12:30 P.M.

Luncheon and Installation of Officers by Mrs. Schaefer, AMA Auxiliary President

2:00 P.M.

Post-Convention Board Meeting

6:00 P.M.

Fun Night at Club Plantation

**SPECIAL MEETINGS AND
ANNOUNCEMENTS
COMMITTEE ON POSTGRADUATE
INSTRUCTION**

The Committee will have a luncheon in Parlor C, Maxwell House, on Monday, April 19, at Noon.

PRESIDENT'S NIGHT**Monday Night April 19, 1954, 8:00 P.M.****Ballroom, Maxwell House****Presidential Address**

DR. A. M. PATTERSON, Chattanooga

President-Elect's Inaugural Address

DR. JOHN R. THOMPSON, JR., Jackson

Awards:

Outstanding General Practitioner of the Year
Winner—Health Project Contest

PRESIDENT'S LUNCHEON**Tuesday, April 20, 1954**

Presenting the President's Guest—DR. LEO H. BARTEMEIER, Detroit, Past-President of the American Association of Psychiatry, and Chairman of the Committee on Mental Health of the American Medical Association.

FUN NIGHT**Wednesday, April 21, 1953****Club Plantation—7:00 P.M.—Murfreesboro Road
Nashville Academy of Medicine—Host**

Fellowship Hour

Dinner (\$3.50)

Professional Entertainment, including "Little Jack Little"

Dancing

Committee on Arrangements:

DR. RAY O. FESSEY, Chairman

DR. C. E. HAINES, Co-Chairman

DR. D. K. GOTWALD

DR. HOMER PACE

DR. DOUGLAS RIBDELL

HOUSE OF DELEGATES**Old South Room—Maxwell House**

First Session—Sunday, April 18, 1954, 9:00 A.M.

Second Session—Tuesday, April 20, 1954, 9:00 A.M.

**FELLOWSHIP HOUR****Tuesday, April 20****Main Ballroom****Maxwell House**

All physicians and their wives are cordially invited to attend a fellowship hour in their honor beginning promptly at 6:00 p.m. Your hosts for this special event will be:

DR. DAUGH W. SMITH

DR. C. M. HAMILTON

DR. JOHN BURCH

DR. R. H. HUTCHESON

DR. H. L. MONROE

DR. LOUIS KILLEFFER

DR. JAMES P. ANDERSON

DEATHS

Dr. E. Russell Zemp died on February 7 at the age of 83 years, following a coronary thrombosis. As the oldest practitioner in Knox County he had remained actively in practice until two weeks before his death. A native of South Carolina, he received his M.D. degree from the University of Maryland College of Medicine in 1894; he married Catherine Hurt of Marion, Alabama, and moved to Knoxville in 1898. He was formerly professor of medicine at Lincoln Memorial University. His practice was in the field of internal medicine. He was past president of the East Tennessee Medical Society. Always he was active in the affairs

CAT.

of his church and the Knoxville Rotary Club.

Dr. Zemp was from the beginning an active member of organized medicine. He joined the Knoxville Academy of Medicine in 1895 and was its president in 1903. He was president of the Tennessee State Medical Association for the year 1926-27. As Speaker of the House of Delegates he set a record length of tenure, twenty years, from 1931 to 1950 inclusive. All who have served in the House under his gavel will remember him as a colorful and witty chairman. Faithful in his attendance at meetings of the Knoxville Academy of Medicine, he was honored by the Academy at its meeting on January 19, 1954, with a certificate of Honorary Membership after 59 years of service.

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Dr. Fredrick F. Dupree, Knoxville, died January 22, 1954, at his home from a heart attack. Dr. Dupree was director of medical services of Eastern State Hospital at the time of his death. Aged 63.

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Dr. Thomas F. Fitzgerald, Knoxville, died January 24, 1954, at his home. Aged 88.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Knoxville Academy of Medicine

At its meeting of February 16, Doctors L. Knight and B. Silverstein discussed the "Development of the Hearing and Speech Center" and "What It Offers East Tennessee."

Nashville Academy of Medicine and Davidson County Medical Society

A symposium on "The Tuberculosis Control Program" was presented at a dinner meeting at Mid-State Baptist Hospital on February 9. Dr. L. D. Zeidberg described the "Williamson County Tuberculosis Study"; Dr. R. S. Gass discussed "The Field Service"; and Dr. W. W. Hubbard "The Hospital Program" of the state program.

Memphis and Shelby County Medical Society

The annual business meeting, a dinner meeting, was held at the Memphis Country Club. The following officers were elected: Dr. Phil Lewis as President-Elect, Dr. Gilbert Levy as Vice-President, Dr. E. D. Mitchell as Secretary and Dr. Battle Malone as Treasurer.

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The January 5 meeting was held at U. S. Naval Hospital, Millington. The Staff presented the program: "Cardio-esophageal Relaxation—Treated with an Inexpensive Chair," by Lt. J. W. Singleton; "A Clinical Evaluation of 25 Cases Treated with Terramycin, Intramuscularly," by Lt. T. F. Middleton; and a case presentation of "An Unusual Surgical Condition in a Five Year Old Child," by Cmdr. E. F. Norwood.

Roane County Medical Society

Dr. George E. Wilson, Rockwood, is the 1954 president of the Society, succeeding Dr. Paul Spray of Oak Ridge. Other officers elected recently are: Dr. Jack M. Hays, Oak Ridge, vice-president, and Dr. William P. Hardy, Oak Ridge, re-elected secretary-treasurer. Delegates to the Tennessee State Medical Association are Dr. Louis A. Killefer and Dr. Dana W. Nance.

Consolidated Medical Assembly

Sixty-two physicians from fourteen counties heard Dr. Champ Lyons, Birmingham surgeon, in an address February 2 at a dinner session of the Assembly at the New Southern Hotel in Jackson. Dr. Lyons' subject was "Pancreatitis."

Chattanooga-Hamilton County Medical Society

"Medical Ethics and Economics" was the subject of discussion at the regular meeting of the Society on February 4. Panel members were: Dr. W. E. Van Order, moderator; Dr. A. M. Patterson, Dr. Edward T. Newell, Dr. William J. Sheridan, and Ed L. Bridges, Public Service Director of the State Association.

Weakley County Medical Society

The Society held its annual meeting recently and elected 1954 officers. Dr. Paul

Wilson, Dresden, was named president; Dr. Ira Porter, Greenfield, vice-president; and Dr. S. J. Schaeffer, Jr., Dresden, secretary. Dr. Martin Beyer was selected as delegate to the State Association.

MEDICAL NEWS IN TENNESSEE

University of Tennessee College of Medicine

Memphis' Medical Center is undergoing a tremendous expansion program.

Its teaching and research facilities, the University of Tennessee Medical Units, are being enlarged by a \$5,000,000 building program. The City of Memphis is spending an additional \$3,000,000 to enlarge the facilities of the City of Memphis Hospitals, including the construction of a new Negro teaching hospital and the addition of two floors to the pediatric wing of the John Gaston Hospital.

In addition, Baptist Memorial Hospital is adding a 450 bed addition at a cost of \$5,800,000. The Campbell Clinic is building a \$500,000 addition for diagnostic purposes.

In 1950 the University established a Postgraduate Department to offer programs in medicine, dentistry, pharmacy, nursing and other allied fields. The programs are presented to inform members of the various professions of the latest developments in their particular field.

When the new Institute of Pathology Building was completed in the fall of 1951, the old building was converted into the Institute of Clinical Investigation. The building houses the section of clinical chemistry, section of clinical physiology, and experimental surgery. All of the clinical chemistry determinations for the John Gaston Hospital are made by the section of clinical chemistry. The section of clinical physiology is devoted to cooperative clinical and physiological research.

Active research programs are being followed in a number of fields at both the clinical and pre-clinical level. One of the largest investigations is in the field of cancer. Most of this research is conducted in the Cancer Research Laboratory, which was

completed in the summer of 1951. The program is supported generously by the U. S. Public Health Service, the American Cancer Society and other agencies.

The new building is expected to be completed by 1954. When it is completed both the Wittenborg (Anatomy) Building and the C. P. J. Mooney Memorial Library Building will be remodeled. An additional floor will be added to the Pharmacy Building. Expanded facilities will thereby be provided for the Division of Anatomy, the Library and the Division of Pharmacology.

The building program of the University and the City of Memphis Hospitals follows.

The Administration-Postgraduate Building is being erected on the northeast corner of Dunlap and Union. The five story building will house the administrative staff of the University and will provide rooms for the Postgraduate Department. The building will be connected by an arcade with the Pharmacy Building at 874 Union Avenue. The offices of administration are currently housed in the C. P. J. Mooney Memorial Library Building.

A five story Chemistry-Physiology Building for the University is under construction on Union Avenue. The first three floors will provide facilities for teaching and research by members of the Division of Chemistry. The fourth and fifth floors will be occupied by the Division of Physiology. A full basement will provide extensive storage facilities, a high-level activity radioisotope laboratory and space required for electrical distribution panels and air conditioning units. The building will be connected by an arcade with the Pharmacy Building.

A Medical-Surgical Building for the University is being built on Dunlap south of Gailor Psychiatric Hospital and Diagnostic Clinic. The building will be connected with the hospital by corridors on the first four floors. It will be occupied by the Family General Practice Clinic of the College of Medicine, medicine and pediatrics Out-Patient Departments, cardiology research laboratory, obstetrics and gynecology, psychiatry, neurology, orthopedics, radioactive isotope, and other special clinics. The sixth and seventh floors will be occupied by the

bacteriological laboratories of the Memphis and Shelby County Health Department and the Memphis branch of the Tennessee State Health Department. These laboratories are currently quartered in the Pharmacy Building.

The City of Memphis has begun construction of a 125 bed teaching hospital for Negroes on the corner of Dunlap and Jefferson adjacent to Isolation Hospital. This new hospital will accommodate private Negro patients and function as a teaching facility for Negro physicians, technicians and nurses.

The pediatric wing of John Gaston Hospital will be enlarged by the addition of two floors; this will add 50 beds and modernize this facility for children.

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Dr. James S. Davis of the Department of Anatomy will receive \$9,000 from the National Science Foundation for two years' research in "The Effects of Accessory Nutritional Factors on Uterine Metabolism."

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Dr. O. H. Derryberry, of Chattanooga, director of health for the T.V.A., has been appointed lecturer in Preventive Medicine.

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The following Memphis physicians have been appointed to the staff of the College: Doctors James Seale, Robert M. Ruch and Bennett E. Everett, Jr., in the Division of Obstetrics and Gynecology; Doctors Eugene J. Spiotta, Sam C. Carter and Jerome Swarts in the Division of Medicine; Doctors Malcomb Andrew Baker, George Mills, B. E. McLarty, Eugene Gadberry, P. J. Batson, Frank Collins, B. W. King, in the Division of Medicine, General Practice Department.

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A portrait of the late Dr. Conley Hall Sanford, Chief-of-Staff of John Gaston Hospital and chief of the Division of Medicine of the College of Medicine at the time of his death November 16, 1953, was presented to the University of Tennessee College of Medicine in a ceremony at 8 p.m., Friday, February 12, in the Institute of Pathology.

Dr. William C. Chaney presented the portrait to the University. It was accepted by Dr. O. W. Hyman, dean of the College of Medicine. The portrait was unveiled by Dr. Sanford's daughter, Miss Sarah Sanford of Whitehaven. The ceremony was held in the conference room of the Division of Medicine where the portrait will be hung permanently. It was painted by Mrs. Billie Price Hosmer of Memphis.

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A portrait of the late Dr. E. E. Francis, former professor of surgery, has been presented to the University. The presentation address was made by Dr. William C. Colbert. Dr. O. W. Hyman, dean of the College of Medicine, accepted the portrait. It was painted by K. Doyle Ford (Mrs. James E. McGehee).

Dr. Frances was graduated from the University of Louisville in 1885 and came to Memphis where he began teaching at the old Memphis Hospital Medical College, which became a part of the University of Tennessee College of Medicine in 1913. In 1897 he was appointed professor of surgery, continuing in that position until his retirement in 1933.

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Vanderbilt University School of Medicine

Dr. H. Vasken Aposhian has been appointed as Instructor in Pharmacology, coming from the school of Medicine and Dentistry at the University of Rochester. He will continue his work in the field of anti-metabolites.

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Dr. Alfred Blalock, Professor at Johns Hopkins School of Medicine, delivered the second annual Barney Brooks Memorial Lecture in Surgery on January 29. One of the highlights of the evening was an unveiling of a portrait of Dr. Brooks by his widow immediately following the lecture. The portrait will hang permanently in the offices of the Vanderbilt Surgery Department. Dr. Blalock, who served as the first resident surgeon under Dr. Brooks at Vanderbilt from 1925-27, spoke on "Some Aspects of Cardiovascular Surgery."

Mr. Irvin Clinton Wade has been appointed as Public Relations Director of the Vanderbilt Medical Center. He has had an extensive background in the newspaper and public relations field, in Atlanta, Georgia, and Knoxville and Nashville, Tennessee.

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Tennessee G.P.

The first issue of the *Tennessee G.P.*, Journal of the Tennessee Academy of General Practice, has made its appearance, under the editorship of Dr. William M. Hardy. It has a pleasing format and offers the Tennessee Academy of General Practice a publication for the presentation of matters of common interest.

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Five County Medical Society

The Society, composed of physicians in Cumberland, Overton, Jackson, Putnam and White Counties, has elected officers for 1954 as follows: President, Dr. Frank L. Sidwell, Livingston; Vice-President, Dr. Charles A. Mitchell, Sparta; Secretary-Treasurer, Dr. J. E. Matson, Cookeville.

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Shelby County Thoracic Society

The newly organized Society held its initial dinner on February 17. Dr. B. A. Cockrell was named president. Other officers selected at this meeting were: Dr. M. M. Marolla, secretary-treasurer, and Board members Dr. Felix Hughes, Dr. F. H. Alley, Dr. Earl P. Bowerman, Dr. M. L. Patton, Dr. Samuel Phillips, and Dr. S. Gwin Robbins. The Society is a local branch of the Tennessee Thoracic Society which was organized in April, 1953.

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Department of Public Health Special Letter

TO: Doctors of Medicine

SUBJECT: Gamma Globulin for Infectious Hepatitis and Measles

I am enclosing a revised copy of "Procedures for the Use of Gamma Globulin in Infectious Hepatitis and Measles."

I should like to call your particular attention to the references concerning the reporting of these diseases on the weekly morbidity cards to the local health departments. The amount of gamma globulin that we receive from the Office of Defense

Mobilization depends directly on the number of cases which you officially report. You need not expect the local health department to have gamma globulin available for your patients if you do not report the cases that you see. I urge you to report your cases in order that we may have sufficient gamma globulin in for your use.

The gamma globulin distributed for infectious hepatitis and measles should not be given to poliomyelitis contacts because it may not contain antibodies against that disease.

Sincerely yours,

R. H. HUTCHESON
Commissioner

Procedures for the Use of Gamma Globulin in Infectious Hepatitis and Measles

(Revised January 21, 1954)

A. Gamma globulin will be allocated to local health departments on request based upon the number of cases of measles and infectious hepatitis reported during a current period. The amount to be allocated will be one and one-half times the number of cases reported. If twenty cases have been reported in a given period such as a month, then 30 cc. of the material will be available to the local health department.

B. Since the amount of gamma globulin received by the Tennessee Department of Public Health is based directly on the number of cases of these diseases reported, physicians are requested to cooperate by reporting cases seen. Infectious hepatitis cases should be reported by name, address, color, sex, and age. It is not necessary to report measles in the same amount of detail. A report of the number of cases of measles seen during a particular week will suffice. Reports should be made on the weekly report card which is sent to each physician every week.

Measles (Rubeola)

1. Gamma globulin shall be given only for the modification of the disease except under special circumstances.

2. The agent shall be restricted to intimate contacts of measles cases.

3. The agent shall be restricted to children who have not entered grammar school. Where there is a special reason for giving the agent to a child above the pre-school age, a special request should be made to the local health officer for the agent with a full explanation being given.

4. The dosage for the modification of the disease is as follows, and this should be given on the fifth or sixth day after exposure.

Under 1 year of age—15-25 pounds—0.5 cc.

One to three years —25-38 pounds—0.8 cc.

Three to six years —38-70 pounds—1.4 cc.

Infectious Hepatitis

1. Gamma globulin shall be limited to intimate home contacts of infectious hepatitis cases.

2. The agent shall be limited to persons under

18 years of age and pregnant women. Under special circumstances where it is thought that others should receive the agent, a special request should be made to the local health officer with a full explanation being given.

3. When the agent is given it must be given within thirty days from the date of contact with the case.

4. If it appears that an outbreak of infectious hepatitis is occurring in a school, particularly a grammar school, a local health department may request gamma globulin for mass school inoculation. In making the request the number of cases with dates of onset and the number of children in the school shall be included as a part of the request.

5. The dosage, based upon 0.01 cc. of gamma globulin per kilogram of body weight, is as follows:

Under six years of age	—0.5 cc.
Six to ten years	—1.0 cc.
Ten to fourteen years	—1.5 cc.
Fourteen years and over	—2.0 cc.

German Measles (Rubella)

1. Gamma globulin shall be restricted in German measles to pregnant women during the first four months of pregnancy who have not previously had the disease and whose exposure has not been longer than eight (8) days.

2. The dosage is 4 cc.

PERSONAL NEWS

Dr. Sam Sanders, Memphis, is now Chairman of the Section on Laryngology, Otology, and Rhinology of the Scientific Assembly of the American Medical Association. He will deliver an address at the Section Meeting in San Francisco on June 22.

Dr. R. C. Kash, Lebanon, has been elected President of the Wilson County Concert Association for the 1954-55 season.

Dr. C. L. Grabeel has opened his office in Spring City for the practice of medicine.

Dr. Clifford Ludington, following surgical training at Erlanger Hospital, is now in practice at Dunlap.

Dr. Foster Hampton, Jr., Chattanooga, addressed his local Rotary Club recently on new developments in cardiac surgery in connection with the local Heart Association Drive.

Dr. C. C. Johnson, Rogersville, has been elected mayor of his city.

Dr. George Harvey, formerly of Jackson, Mississippi, has joined **DR. W. T. FITTS** of the Fitts-White Clinic in Jackson, Tennessee, for the practice of medicine.

Dr. Frank A. Moore, Manager of the Jackson Clinic, is the new president of the Jackson-Madison County Health Advisory Committee.

Dr. I. L. Arnold, Chattanooga, formerly associated with the Isbell Eye, Ear, Nose and Throat Hospital, has opened private offices in the Medical Arts Building.

Dr. P. J. Batson and **Dr. B. W. King**, both of Millington, have been named to the General Practice Staff of the University of Tennessee Medical School.

Dr. Fred J. Hooper, formerly of Spring City, has opened his offices in Harriman for the practice of medicine and surgery.

Dr. R. L. Sanders, Memphis, heads a group of some 80 Memphis physicians who will solicit members of the profession for their contributions to put over a drive for funds to complete the 13-story addition to the Memphis Baptist Hospital.

Dr. Robin F. Mason is the new chief of staff of the Methodist Hospital at Memphis.

Dr. Joe Strayhorn, Nashville, has been named president of the Nashville Pediatrics Society, succeeding **Dr. Amos Christie**.

Dr. John Donald Caldwell, formerly of Jefferson City, has opened his offices for the practice of medicine, surgery and obstetrics in Morristown.

Dr. W. N. Carpenter, Union City, has been elected to Fellowship in the American Academy of Obstetrics and Gynecology.

Dr. S. D. Sullenberger, Dandridge, who has been disabled for several months, is now able to resume his practice.

Dr. Howard W. Whitaker is now located in Savannah for the practice of surgery.

Dr. David Turner, formerly of Jasper, is now associated with the Hixson Hospital and Clinic at Hixson.

Dr. Charles C. Smeltzer, Knoxville, was elected a vice-president of the Mid-South Post-graduate Medical Assembly during the annual meeting of the Assembly in Memphis last month.

Dr. H. William Scott, Jr., and **Dr. Elliot V. Newman** of Nashville addressed the meeting of the South Carolina Heart Association in Greenville, South Carolina, on February 1.

Dr. Joseph D. Robertson announced the opening of his office for the practice of medicine and surgery in the Doctors Building, Nashville.

Dr. Dan C. Roehm has joined **Dr. J. B. Hibbits, Jr.**, in the practice of internal medicine in Nashville.

Dr. Bernard J. Pass has opened offices for the practice of dermatology in the Doctors Building, Nashville.

BOOK REVIEW

The 1953-54 Year Book of Drug Therapy.
Edited by Harry Beckman, M.D. Chicago, Ill.: The Year Book Publishers, 1953.
 538 pages. Price \$6.00.

The Year Books provide the best of that

which has appeared in a voluminous world's literature in abstract form. Able editors select the material in the special fields covered by the several Year Books.

In the management of his patients the physician can do no better than to have available annually the Year Book of Drug Therapy. Thereby he can learn what the literature of the previous year has revealed, what is new in the field of therapeutics, reaffirmations of old methods and the untoward effects which may accompany the use of potentially toxic drugs.

The sections of the book deal with Allergy, Antibiotics, Sulfonamides, Cardiovascular Diseases and the individual specialties.

The reviewer feels that this volume represents money well spent as a handy reference book in the field of therapy.

R. H. K.

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Liver Injury. Transactions of the Eleventh Conference, 1952. Edited by F. W. Hoffbauer, M.D. New York: Josiah Macy, Jr., Foundation. Price \$3.75.

This small book of 265 pages is the report of the Eleventh Conference on Liver Injury held April 30 and May 1, 1952, under the sponsorship of the Josiah Macy, Jr., Foundation. It is edited by F. W. Hoffbauer, M.D. Participants in the Conference are fifteen members and fifteen guests who represent broadly the areas of expert investigation and clinical study in the field of the liver and its disorders. The Conference, as well as this book, has as its purpose the extension of knowledge about the liver and the "promotion of meaningful communication between scientific disciplines."

Reported in these transactions of the Eleventh Conference on Liver Injury is data both practically useful to the physician genuinely interested in the patient with acute liver disease, such as hepatitis, as well as to the research worker in the more fundamental matters concerning the liver, such as enzyme activity in the human liver, anatomical arrangements of the liver, mechanisms of biliary secretions and hepatic histochemistry.

Especially intriguing and practically instructive is the detailed discussions on in-

fective hepatitis led by Dr. George S. Mirick. Equally interesting, in another section on liver morphology, is the thesis of Dr. Hans Elias that the liver structure is laminar in its arrangement rather than cord-like as we have so long been told.

This is not a publication which every physician would want on the bookshelf, but it should be in any central library where students of liver disorders come to read about recent trends in liver investigations.

HARRISON J. SHULL, M.D.

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PLACEMENT SERVICE

The placement service of The Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 322 Doctors Building, Nashville 3, Tennessee.

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Locations Wanted

Two young physicians, Priority IV, 1952 U. T. graduates, desire to locate in East or Middle Tennessee as partners in General Practice. Available October, 1953. LW-30

★

A 32 year old, married physician, Jewish Faith, priority 4, degree from Wisconsin, 1944, board certified in surgery, desires an assistant or associate relationship. Available immediately. LW-35

★

A 26 year old, married, physician, M.D. Tennessee, 1949, draft exempt, desires associate relationship for general practice and general surgery. LW-46

★

A 31 year old, married physician, Catholic, priority 4, degree from University of Tennessee, 1949, desires an associate relationship for general surgery. Available February 20, 1954. LW-47

★

A 28 year old, married physician, Protestant, graduate, Bowman Gray School of Medicine, 1946. Now completing two years of service in Air Force, in which all time was spent in obstetrics-gynecology specialty. Available January, 1954. LW-49

★

A 54 year old, married physician, Protestant, graduate University of Minnesota, board certificate in Radiology, desires smaller to medium sized community. Available immediately. LW-50

★

A 34 year old, married physician, Protestant, graduate University of Cincinnati, 1943, priority

4, desires clinic, preferred community 10,000 up, General Practice. Available March 1, 1954.

LW-51

★

A 33 year old, married physician, Protestant, University of Tennessee graduate, priority 4, general practice, preferred community 5,000 to 25,000 with well equipped community hospital. Will consider group practice and industrial practice. Available March 1st.

LW-52

★

A 30 year old, married physician, Protestant, graduate Duke University, priority 4, desires general surgery in small or large city. Available July 1st.

LW-53

★

A 34 year old, married physician, Protestant, graduate Medical College of Virginia, priority 4, general practice, desires small to moderate community. Available July 1st.

LW-54

★

A 28 year old, married physician, Protestant, graduate Emory University, at present in military service. Desires small community, would consider industrial work. Available July 1st.

LW-55

★

A 37 year old, married physician, Episcopal faith, graduate Temple University Medical School, will be released from U. S. Navy June 15th. Desires location in Knoxville, internal medicine, partnership or part or full time teaching position.

LW-56

★

A 28 year old, married physician, Episcopalian, graduate University of Tennessee, priority 4, desires general practice of 5,000-10,000 community. Available July 1st.

LW-57

A 34 year old, married physician, Protestant, graduate Northwestern University, priority 4, desires general surgery in community of 50,000-250,000 population. Availability depending on time and place opportunity presents itself.

LW-58

★

A 31 year old, married physician, Protestant, graduate University of Tennessee, priority 4, one year training in Radiology in U. S. Air Force. Desires associate in community 10,000 to 20,000. Available March 29.

LW-60

★

A 42 year old, married physician, Roman Catholic, graduate University of Vermont College of Medicine, priority 4, Specialty Urology 100%, desires associate or location in community of 100,000 preferably. Available March or April.

LW-62

★

A 34 year old, married physician, Protestant, graduate University of Tennessee. Previous mili-

tary service October, 1945-September, 1947. Desires community 15,000-50,000. Specialty, General Surgery. Available either July, 1954, or January, 1955.

LW-63

★

A 29 year old, married physician, Protestant, graduate University of Tennessee, Military status. Priority IV in September. Desires general practice in or near large city (100,000 or more). Available immediately.

LW-64

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A 36 year old, married physician, Roman Catholic, graduate Marquette University, Milwaukee, Wis., draft exempt, Specialty Surgery in middle-sized community. Available immediately.

LW-65

★

A 29 year old, married physician, Episcopal, graduate Harvard Medical School, military status, 25 months active duty USAF. Pathologist for a single general hospital of 150-300 beds. Available immediately.

LW-66

★

A 33 year old, married physician, Protestant, graduate University of Illinois, military status, deferred, no previous service. Desires general surgery in community above 20,000. Available immediately.

LW-67

★

A 30 year old, married physician, Protestant. No obligated military service. Graduate of University of Oklahoma, beginning practice in Urology specialty. Community preferred 35,000 to 1,000,000. Available immediately.

LW-68

★

Man and wife team interested in Tennessee practice where service needed, either by themselves, in group practice or associated with older doctor. Man 35, Georgia native, Emory graduate, soon board eligible in OB-GYN: has taken part I American Board of Surgery exam. Wife, 33, Maryland graduate, interested surgery. Both Episcopalians. Prefer 20,000 population upward. Available April 1, after military discharge.

LW-69

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A 31 year old, married physician, Protestant, at present in U. S. Army until June, Graduate George Washington University, Internal Medicine with specialty in Cardiology. Prefer community 10,000 or over. Available July.

LW-70

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Married physician, Protestant, graduate University of Tennessee, at present in U. S. Air Force. Desires general practice in or near large city. Available September.

LW-71

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1950 graduate University of Tennessee, married, Protestant, Priority 4. General Practice desired in town with hospital or relatively close. Would consider association or industrial work. 28 years old. Available immediately.

LW-72

A 26 year old, married physician, Catholic, graduate Louisiana State University, 1952, priority 4, desires clinic for general practice in community 4-10,000. Available immediately. LW-73

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A 28 year old, married physician, Protestant, graduate University of Tennessee, 1950, priority 4, desires small town general practice, would consider clinic, industrial, assistant or associate. Available immediately. LW-74

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Married physician, 34 year old, Episcopalian, graduate University of Maryland, Board Certificate American Board obstetrics and Gynecology, military status—not eligible—served during World War II. Community preferred 30-60,000. Available late fall or winter 1954. LW-75

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A 28 year old, married physician, Protestant graduate University of Tennessee 1949, three years training in general surgery, priority 4, completing residency June 1954, available July 1, 1954. Desires community 20-100,000. LW-76

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A 38 year old, married physician, Catholic, priority 4, graduate Hahnemann Medical College, Philadelphia, Pa., GP-Surgery, community preferred, 5-10,000. Available two months after selection of community. LW-77

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A 27 year old, married physician, Catholic, priority 4, graduate Loyola University, Chicago, 1952, want locum tenens near Memphis July 1-September 30. General Practice. LW-78

★

A 31 year old, married physician, Protestant, graduate University of Louisville 1953, priority 4, desires clinic, would consider partnership basis, general practice, community preferred 1500-2500. Available July 1, 1954. LW-79

★

A 26 year old, single physician, Protestant, graduate University of Tennessee, 1954, priority 4, desires temporary practice between graduation and internship, assistant in general practice. Available March 26, 1954. LW-80

★

A 29 year old, married physician, Protestant, graduate Tulane Medical School, 1953, priority 4, desires general practice, clinic, community preferred 2000-6000. Available July 1, 1954. LW-81

★

A 25 year old, married physician, Protestant, graduate Tulane Medical College 1953, Inactive Reserve, 1st Lt., desires general practice. Available July 1st. LW-82

★

A 32 year old, married physician, Hebrew, graduate University of Iowa College of Medicine, Board Certificate held in Urology, priority 4, desires clinic, assistant or associate, community 25,000-500,000. Available July 1, 1954. LW-83

A 31 year old, married physician, Catholic, graduate Ohio State University 1947, recently discharged from service, desires general surgery in community 10,000-50,000. Available September 1st. LW-84

★

A 29 year old, married physician, Presbyterian, graduate Tulane University 1951, priority 4, Specialty Pediatrics, desires community 25,000 to 50,000. Available July 1, 1954. LW-85

★

A 29 year old, married physician, three children, Southern Presbyterian, graduate Bowman Gray School of Medicine 1946, inactive Status List. USNR; Lt. (j.g.), MCR, Specialty Internal Medicine. Would consider clinic, assistant or Associate. Community preferred 25,000-50,000. Available June, 1954. LW-86

★

A 28 year old, married physician, Protestant, graduate Emory University School of Medicine, Veteran, previous service 3 years U.S.N.R. Active duty. Desires general practice, clinic, assistant or associate in community 3,000-10,000. Available July 1, 1954. LW-87

★

Physician Wanted

Upper Cumberland County, 13,000 population with modern 30-bed hospital, needs additional physician to do General Surgery and Obstetrics. PW-26

★

South Central Tennessee town, 1,100 population, farming and dairy center. Only doctor recently deceased. Home and office equipment available. PW-27

★

Large West Tennessee Hospital needs replacement for Director of the Department of Radiology. PW-32

★

Urologist in large East Tennessee city desires person to take over his office and practice. Office located in large physicians' building and is the only Urological practice in the center. PW-33

★

Full-time Negro physician needed for full-time teacher of Pediatrics in Medical School. PW-34

North central town, 650 population with 5,000 people in trade area desires general practitioner. Area formerly served by two physicians now deceased. Good agricultural area. PW-38

★

Partially disabled Memphis physician with large general practice and modern facilities desired associate, various financial arrangements possible. PW-40

★

General Practitioner—Interested in participating in the General Practice teaching program at the University of Tennessee on either a half-time or

full-time basis. The University of Tennessee College of Medicine, General Practice Program, 874 Union Avenue, Memphis 3, Tennessee.

PW-41

★

Draft exempt experimental pathologist needed at Oak Ridge National Laboratory to conduct projects to determine effects of ionizing irradiation and the pathogenesis of disease related to irradiations. Special research skills required.

PW-42

★

Small town of 2,000 population, located in Northwest Tennessee, desires a replacement for doctor leaving for Military Service, approximately January 1, 1954. Practice is of general practice type, with numerous home calls made, busy office practice and long office hours due to the type of population surrounding Greenfield. Any one interested please contact Nathan F. Porter, M.D., at Porter Clinic, Greenfield, Tennessee.

PW-43

★

Rapidly expanding industrial community in Southern East Tennessee desires general practitioner. Population of town, 1,000, population of trade area, 6,000. Community cooperation promised in securing housing and office space. Medical Society cooperation also assured.

PW-44

★

23-bed, privately owned hospital needs General Practitioner with surgical training immediately.

PW-46

★

General Practitioner to replace doctor who will be called into Military Service in the near future. Well established practice in suburban district, Nashville.

PW-48

★

Wanted: An associate, in general practice. Various arrangements possible. Nine room clinic, moderately equipped. Some operating facilities. EKG. BMR, and 100 MA X-ray machine. Two three-room apartments or one five-room apartment above office.

PW-49

★

General Practitioner needed for work in the Paraplegia Section of the Surgical Service of a Tennessee Veterans Administration Hospital.

PW-50

★

Town of 5,000 population, located in West Tennessee, desires general practitioner. Population of trade area 10,000. Community cooperation

promised in securing housing and office space. Wonderful opportunity for a young doctor.

PW-51

★

Wanted: Physician qualified to do general practice and surgery to take over established practice and 12 bed hospital in Dandridge, Tennessee. Facilities may be either purchased or leased. Ill health required disposal. Write or call Dr. S. D. Sullenberger, Dandridge, Tennessee.

PW-52

★

Good country practice for one man. Twenty miles to excellent Hospital and medical center. Open staff in the Hospital. Present Practitioner considering specializing. Modern brick clinic with X-ray, well equipped laboratory, two treatment rooms, one bedroom, consultation room, business office and large waiting room. Adequate room for expansion either behind or by adding second story.

PW-53

ANNOUNCEMENTS

Physicians throughout the country have found in the American Diabetic Association *Forecast* a valuable supplement to the teaching which the physician gives his patients in the many problems which arise in the proper management of diabetes.

The A.D.A. *Forecast* is an authoritative publication, held in high regard by physicians and their patients and families.

Typical articles in recent issues of the *Forecast* include: "The Care and Handling of Insulin Syringes," "Marriage and the Diabetic," "The Gentle Art of Job Hunting—for Diabetics," "Life Insurance for Diabetics," "Income Tax Deductions for Diabetics," "The Child with Diabetes," "Summer Camps for Diabetics," "Helps Others to Learn What You Have Learned," and "Restaurants I Have Known, or How to Live with Chefs and Like it!"

Subscriptions are available to all at \$2.00 a year, \$3.50 for two years or \$4.75 for three years. The *Forecast* is published bimonthly by the American Diabetes Association, 11 West Forty-Second Street, New York 36, New York.

Sample copies and subscription forms are available without cost to any physician for use with his patients. Many physicians have found it quite valuable to present a year's subscription to each new diabetic patient; the good will engendered has been well worth the nominal cost.

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Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

APRIL, 1954

Number 4

WHAT NOW!*

JOHN R. THOMPSON, JR., M.D., Jackson, Tenn.

First I would express to all in the Association my profound gratitude and deep appreciation for the honor you have bestowed upon me, in affording me the privilege of serving as your president for the ensuing year. It is with a deep sense of responsibility and humility that I accept this office and assume the responsibilities and obligations that are part of the duties entailed. I can assure you my best efforts in the behalf of the medical profession and the people of the State of Tennessee.

We attended our first Tennessee State Medical Association meeting in this city thirty years ago. It was then a small association of medical men who only were interested in their own professional problems. We have seen the growth of the Association through the years led by the farsighted leaders you have seen fit to have serve you. We have seen the evolution from a primary professional aspect to a growing, vigorous, virile association; keen to the problems of modern medicine and to the people as a whole. We regret that some of these leaders are no longer with us, so we might have the wonderful privilege of going to them and discussing the varied and sundry problems that arise daily. But what I have gotten through the contacts with these distinguished predecessors is a burning desire to perpetuate one ideal and one alone for the future; that is, to see that the best medical care that it is possible to give be furnished every individual in Tennessee. With this one thought in mind, we must now set our sights on the following.

In attempting to fulfill this burning desire; to open new fields of service to our patients and to the health of the public, we

look to one group of activities which we call public service. These activities are referred to as public relations by other state medical associations. It was a privilege for me to be on the sub-committee which drafted "The Tennessee Ten"—the objectives of the medical profession of Tennessee; and we decided at the time these objectives were adopted that "our concept of public relations is public service." We have been complimented that several other state associations now are referring to their programs as "public service" and that even the American Medical Association has adopted a similar approach rather than public relations. In the minds of the general public the term "public relations" denotes publicity and propaganda and we are determined to follow our dictum elaborated above that the Tennessee program shall be one of performance, not publicity and propaganda.

Further elaborating on the above dictum, we are determined that one of our jobs is now and always will be the task of extending the highest quality of medical care to more and more people at prices they can afford to pay. We have advanced far down the price line by advancing and expanding the doctor-sponsored Tennessee Plan of Voluntary Health Insurance. We are now at a crucial point and definite advancements of that plan are now indicated.

The Tennessee Plan and all health insurance plans, for that matter, are facing the possibility of retrenchment or bankruptcy unless four groups of peoples stop abusing them.

We are going to be honest about this matter; therefore, we will name the medical profession as the first of these groups. There are certain physicians throughout the country who abuse and "ride" health insurance

*Inaugural Presidential Address read before the Tennessee State Medical Association, Nashville, April 19, 1954.

policies. Some of the abuses for which physicians may be criticized are:

1. Admittance to hospitals for purely diagnostic purposes only. These admittances can easily have had their investigative studies done either at the doctors' offices or as out-patients. Medical cases such as allergy studies, anemias, colitis, gastrointestinal problems, and headache are the worst offenders.

2. Patients receiving X-ray therapy or physiotherapy in hospitals when they can be treated on an out-patient basis and not be hospitalized. These are causes of hospitalization for convenience only.

3. Patients who receive prolonged pre-operative medication and treatment as a matter of convenience for the doctor and to conform to his operative schedule of only certain days at hospitals or at certain hours.

4. Orthopedic patients with prolonged hospital stay even though they are ambulatory. The shining example of this are the 27-day banjo splint on a finger or a walking cast for a fracture of the leg. There is no defense for such actions but the one usually used is the present day socio-economic conditions, that is, the patient lived in a rooming house or crowded home, etc.

5. Overmedication. This is especially true in the use of the various miracle drugs and expensive vitamin preparations and especially the doctor's oversight in not cancelling the use of such expensive drugs when they will no longer be of benefit to the patient.

6. The ordering of unnecessary laboratory procedures. Slot machine diagnoses are sometimes made by staff physicians who desire to make an impression. All the laboratory tests in the book are ordered with the hope that a positive diagnosis will be made. This can be classified either as plain laziness or plain ignorance.

The doctor is not solely to blame for these abuses. The next group which must accept part of the responsibility are the hospitals. About 90 per cent of all hospital administrators are laymen. They explain "who am I to investigate or criticize the medical staff for abuses?" It is the administrators duty, nevertheless, to encourage the medical staff to investigate themselves. These are spe-

cific situations which all hospitals should try to alleviate:

1. Late admissions not allowing case workups on the day of admissions, resulting in an extra day of patient care.

2. Delays due to bottlenecks in the ancillary services in the hospitals, especially during late afternoons or week ends.

3. Delay in reporting the results of tests.

4. Delay in notification of discharge which often results in an extra day of patient's stay.

5. Excessive drug expenses because of poor house orders. How long should medication or treatment be given in a hospital without the order being rewritten?

6. Routine procedures. We know of one hospital which has a standing order for an electrocardiographic tracing on each admission. Absurd, but true.

7. The filling of prescriptions at the end of the hospital stays at the expense of the insurance carrier so that they may be taken home. Such prescriptions could and should be at the patient's expense and purchased from their local pharmacists.

And then the patients themselves are prime abusers. How many times have you heard a patient say, "I am in on Blue Cross, Doc. Shoot the works even though it has no relation to why I am here." A shining example of this, gentlemen, is one who is in for a simple herniorrhaphy and asks for an electrocardiogram and X-ray of his stomach and an intravenous pyelogram just because he has insurance and feels that he is entitled to it. Then there is the patient who desires to remain a few more days than is necessary because her husband is working or must make a short business trip or for some other trivial reason.

Then the worst offender is the public who cannot seem to realize that what they bought at the price they paid for it cannot take care of strictly diagnostic studies. Their attitude is primarily that having paid for Blue Cross for a number of years and having received no benefits, they therefore feel that they should be entitled to all of these studies no matter what the circumstances. When the doctor refuses him, the patient immediately becomes angry and an-

other step is taken to kill the goose that is laying the golden egg.

And finally the insurance companies themselves are guilty of abuses particularly in two specific instances.

1. Poor, false or misleading advertising. Typical of some of the full page advertisements that scream at you from the pages of our daily papers states that "so and so cross pays all the operating room charges, laboratory tests, electrocardiograms, etc." and implies that they pay all the bills. I have yet to see a policy that will not pay what it says it will, but so many are written in such language that the uninformed layman, thinking he has full coverage, finds out too late that he is only partially covered for essential services with large amounts coverage for seldom used or infrequent procedures. What this adds up to is that insurance companies should tell the prospective policyholder that he cannot have procedures for diagnostic purposes only and he is not entitled to one day more than is necessary for his proper treatment. The insurer must be honest with the insured.

It appears that underwriters are trying to carry water on both shoulders implying that the sky's the limit on one hand, and asking the physician and the hospitals to put up barriers and restrictions to stop overusage and abuses on the other.

2. Ineffective appeals to governmental agencies. Underwriters are not helping hospitals enough in fighting to get cost from governmental agencies. One of the few truthful and worthwhile statistics in the recent article in the *American Magazine* on hospital costs quoted an average loss per patient day of \$4.60 on all governmental agencies cases in non-profit hospitals in New York. This loss runs into the millions of dollars per year in the United States and is subsidized by Blue Cross to the extent of coverage of its percentage of patients in such hospitals. Blue Cross and commercial underwriters must take greater interest in helping hospitals make government pay its share of the cost.

The Tennessee Plan is now going through another stage of growing pains for the benefit of the public. You must crawl before you can walk, and walk before you can run.

We are now in the walking stage. A medical fee schedule has been submitted along with one for anesthesia and one for the use of X-rays for therapy. These are some of the things we have been told are desirable in our policies when we have held our conferences with representatives of the various lay groups. This will mean that our policyholders soon may benefit in cases where the illness is non-surgical, non-orthopedic and non-obstetric. In short, if the medical plan is adopted and added as a rider to the Tennessee Plan, the policies will pay off for such illnesses as pneumonia, jaundice, influenza and gallbladder attacks which are non-surgical. Despite complaints that it was inadequate and did not cover enough, The Tennessee Plan has developed rapidly since it was projected in July of 1949. We are pushing toward the one million mark in persons covered. With new benefits added many more thousands will undoubtedly be covered by its many advantages.

Again may I call your attention to our original premise, to furnish the best possible medical care to every individual in Tennessee. The public service program last year sponsored the enactment of the law by the 1953 General Assembly to provide free hospital and medical care for every medically indigent Tennessean. This law becomes effective July 1, 1954, and the Public Service Committee is now working to persuade county courts to take advantage of this State-County matching fund. The initial appropriation, of course, is far short of the real need but we have made a beginning and we have high hopes of obtaining an adequate appropriation from the 1955 legislature.

The Tennessee indigent law is the only one in the United States under which doctors have pledged themselves to care for hospitalized indigents at no cost whatever to the patients, the state, or the county. We have now received requests from twenty-eight states for a copy of the law and the progress of this program is now being watched all over the world with a great deal of interest. Again, the Volunteer State has put forward another first under the banner of Public Service. I would like to digress here and urge you to request your

legislators, who are to be elected this summer, to vote for an adequate appropriation to carry on the Indigent Hospitalization Law at the sessions of the legislature in 1955. We put millions of tax monies in rebuilding roads, why not put two million dollars a year in rebuilding mankind?

I desire to echo the words of a county society president recently installed, who said that, "Medicine's greatest sin is silence." We agree that it is far past time when we must stop looking the other way when we know that a fellow physician mistreats the public. We, as a rule, know who they are, and in most instances what they are doing. It is that small group that gave rise to the recent cover on one of the national magazines that blared forth to the world that "Some Doctors Should Be in Jail." That is why this year the number one project of the Public Service Committee has been "House Cleaning." We must clean our own house and for that reason an intensive job of checking on complaints has been underway. Grievance Committees have become more active and aggressive in the interest of the patient. Hospital Tissue Committees have stiffened their backbone and suspended or revoked staff privileges of some physicians, due to unnecessary operative procedures and removal of normal tissues. In one area, a group of courageous doctors called attention to a very high cesarean section rate which was then in vogue. These were being performed for "trivial reasons." As a consequence the cesarean rate has been greatly lowered and is guarded diligently. This group is working for better medical attention to the public and whenever this sort of thing happens the public is convinced that we do intend to set our house in order. As a consequence, the public will be less inclined to seek government regulations of the medical profession. We are by no means the only profession that probably has members which should "be in jail" but this is our profession. We are proud of it; let's continue to keep it clean and honorable.

Our Medical Schools in Tennessee cooperating with the Public Service Committee have established courses for seniors in medical ethics. They are to be commended and

given our active support in giving medical students the benefits of public relations we learned the hard way. We, who have graduated from "The University of Hard Knocks," should see that our younger physicians are not subjected to that same course but are taught by our experience. We must start him on the right road, not just let him wander and meander along the trial and error route.

My predecessor, Dr. A. M. Patterson, has very correctly said that, "If you are an ethical person you will be an ethical doctor." The word ethical means "pertaining to morals." It does not mean just knowing the difference between the right and wrong treatment of a fellow-man but it means PRACTICING the difference.

Someone has described the doctor as "a man who doesn't have time." I am sure we, as the general rule, overdo this definition. I wonder if we would not be a great deal better off and our patients a great deal better cared for, if we would become at least part time citizens. If we could slow down just a bit in our race to practice medicine and participate in public affairs, I am convinced that we would be more efficient, longer serving doctors. We might also eliminate some of those death notices which read, "Dr. Hurry was forty-one." Surely by becoming better citizens we can strengthen our ties with woman's clubs, with labor, with lawmakers, with lawyers, with the clergy, with the schools and other institutions that help mold the minds of the bodies we mend and then we would be of more value to our patients.

In Tennessee, we have been trying to accentuate the positive by rendering Public Service, rather than by climbing on the soap box and screaming down somebody else's plans and promises. We have said little about Socialized Medicine in this State for several years. We can continue to ignore it if we REALLY make certain that high quality medical care is extended to all the people. However, I commend to your attention a recent article in the *Reader's Digest* entitled "The VA (Veterans Administration) Route to Socialized Medicine." This article is worthy of note because it cites the VA Medical care system's unfairness to

veterans. We have been "just talking" at the AMA level about the dangers the VA system holds for the veteran who desires to be free, who fought because he wanted to be free. If we really see that the veteran has freedom of choice of physician and hospital, then it follows that the medical profession will remain free.

We have been speaking mainly of the benefits to the patient by action from outside. Now let's turn to the inside for benefits due to better training of our own physicians. The Tennessee Academy of General Practice deserves a bouquet for several new types of postgraduate training that organization has pioneered. These courses are geared to fit into the nationally acclaimed

program of General Practice Training at the University of Tennessee Medical School. Our State Association with the Tennessee Department of Health, The Medical Schools of Vanderbilt and the University of Tennessee, are in the midst of another two-year course of postgraduate education. I wonder if it is not time for the House of Delegates of the Tennessee State Medical Association to re-evaluate and coordinate these various courses.

In conclusion, let us again remind ourselves of the goal we have set. To furnish every Tennessean with the best possible medical attention and unite all our actions to the fulfillment of this noble purpose by a noble profession.

Heart Force Effect of Sympathomimetic Amines as a Basis for Their Use in Shock Accompanying Myocardial Infarction. Gazes, P. C., Goldberg, L. I., and Darby, T. D. *Circulation* 6:883, 1953.

The problem of shock accompanying myocardial infarction has been comprehensively studied and reviewed by several investigators in recent years. The conclusion of these investigators has been that the shock is the result of one or a combination of the following factors: (1) failure of the heart as a pump and (2) peripheral vascular collapse with a resultant further decrease in coronary flow. Digitalis has been advocated for shock primarily of the first type, and pressor amines, intra-arterial, and intravenous infusions for the second type. Recently, Fink, d'Angio and Biloom have differentiated these two types of shock on the basis of determinations of forearm venous pressure.

Results of this investigation demonstrate that although l-norepinephrine is generally classified clinically as predominantly a pressor amine, it also has a powerful augmenting action on the contractile force of the heart and may thus be beneficially used in shock of either of the above types.

This investigation presents the treatment of fourteen cases of severe shock accompanying myocardial infarction by intravenous infusions of l-norepinephrine and/or Neo-Synephrine. Twelve of the patients were in congestive heart failure. Six patients in congestive heart failure treated

with l-norepinephrine recovered. Five patients in congestive heart failure treated with Neo-Synephrine responded with an immediate blood pressure rise, but the pressure failed to stabilize and the patients succumbed despite continuous Neo-Synephrine infusions. Two patients, with no evidence of congestive heart failure, were brought out of shock by Neo-Synephrine. One of these patients recovered, the other died 48 hours after the Neo-Synephrine infusion was discontinued. One patient, treated with both amines, failed to respond to Neo-Synephrine and was later brought out of shock by l-norepinephrine. This patient died 18 hours after discontinuance of l-norepinephrine therapy.

l-norepinephrine was found to produce pronounced increments in heart contractile force, in addition to pressor effects, in unanesthetized, trained dogs. The contractile force increments were of similar magnitude to those produced by l-epinephrine. Neo-Synephrine was found to be more predominantly a pressor amine, producing only minimal changes in heart contractile force.

The effect on contractile force of the heart of l-norepinephrine is presented as a basis for the high recovery rate observed with this amine in the treatment of shock accompanying myocardial infarction, particularly in those cases with associated congestive heart failure.

(Abstracted for the Middle Tennessee Heart Association by Samuel S. Riven, M.D., Nashville.)

THE YEAR'S ACTIVITIES—IN RETROSPECT*

A. M. PATTERSON, M.D., Chattanooga, Tenn.

Before giving an account of my stewardship for the year now ending, I wish first to express to this Association my profound gratitude for the honor of having been your President. What I have done or tried to do during the year I have stated briefly in the President's Page in our JOURNAL. What my feelings have been, what I wish I could have done, I have not the words to express.

The year has been a great one in many respects, and it is likely no exaggeration to say that it will be outstanding in the annals of this Association. A great amount of work has been done and much has been accomplished; it is with a sense of great satisfaction that we can say that our Association has discharged well its obligations to our profession, to society, and to our country. Our work, however, is not finished; in fact, it will never be finished. Rather, we must consider our year's accomplishments merely as additions to the efforts of last year and as stepping stones to greater accomplishments in the year now coming.

To analyze our activities, it might be well first to review with you the set-up of our organization by which we have been able to pursue our extended program. The broad field of endeavor first has to be surveyed, then the work broken into segments, and suitable committees appointed each to function according to its respective task. These various activities, in turn, then have to be co-ordinated so that duplications, conflicts, and omissions can be avoided, and that the over-all effect of our efforts may be directed toward the common purpose. These various activities require so much detail and organization work that it has become necessary to employ specially trained and expert laymen in some instances, the physicians on the committees being responsible for policies and over-all directives. These committees in turn are responsible to our legislative body, the House of Delegates, and to

the executive branch of our Association, the Board of Trustees.

All of these committees and the various functions they perform may appear confusing to many of our members who may not be familiar with the extent of our program, and with the great responsibility of our profession to society and to our country. Let us remind these members that we are now living in an age of organizations, and that it has become necessary in our society, which is becoming ever more complex for groups of people having similar interests, to organize. It has become necessary for us of the medical profession to do likewise. Our organization, in some respects, is similar to our federal administration in that it has its internal affairs and its foreign affairs.

First, we may ask, what are our internal affairs? In answer to this we would place first the problem of providing our people with medical care of the highest quality. To this end we must see to it that our members keep abreast of the times and pursue their postgraduate education. With medical science making such rapid progress, this is becoming a problem of ever-increasing importance. Next in order, we should mention the obligation of seeing that our house is kept clean. This obligation begins with the individual member and extends throughout our whole organization.

As to our foreign affairs, to carry the analogy of our federal administration further, this has become far-reaching. We refer now to our Public Service program. At this point, let us recommend that we all keep close at hand the "Little Red Book," the Tennessee Ten, where we can refer to it often. Time will not permit us here to review this whole program, but we might call attention to the necessity of stressing one phase of the program at a time. As one project gets organized, and gets to functioning, we then turn to another. Health is everybody's responsibility. Lay groups are entering into this field in increasing numbers and they naturally expect from

*Address of the retiring President, read before the Tennessee State Medical Association, Nashville, April 19, 1954.

us guidance and support in matters pertaining to health. To do this we must have organization and planned action, and in this we must not fail. This applies to the individual members as well as to our component societies and to our Association.

With this brief review of the work of our organization, we can readily see the importance of our committees. Some of these are very active and are doing most praiseworthy work, even to the point of self-sacrifice. Other committees are on a stand-by basis and have not been called into action. Let us remember, however, that they who wait also serve.

Our Association is deeply indebted to these committees for their loyalty and their devotion to duty. First, let us call attention to the outstanding accomplishments of our committee on Scientific Work and Educational Board. Under the guidance of Dr. Kampmeier, we have a JOURNAL that ranks high in medical publications. With the possible exception of the President's Page, it is on a par with any of our Journals. The editorials, especially, are to be recommended to you for careful reading.

In keeping with this excellent means of bringing to our members medical literature of high quality, we must also pay special tribute to our committee on Postgraduate Instruction. Those of us not familiar with the amount of work involved in setting up these postgraduate courses and in carrying out the program perhaps do not realize how anxious these leading members are to see that this opportunity to improve ourselves is afforded us; let us not be unmindful of the aid we are receiving from our medical schools and our Department of Health. The present course is now well under way, and let us hope that it continues to do well and to gain momentum.

Our committee on Prepaid Insurance has also performed in a most commendable manner in setting up and implementing our prepaid insurance plans. At this point, may we go into more detail about the tremendous responsibilities of this committee. The first phase of this work was to get the program started and to get enough subscribers enrolled to place the plan on a sound economic basis. This phase of the

program is meeting with signal success. The insurance principle has become an integral part of our American way of life. President Eisenhower in his message to congress on the Health of the Nation, stressed this point and recommended voluntary prepaid health insurance as a means of solving the high cost of medical care. Our President also stated in his message that better health insurance protection for more people can be provided. Our Association has been aware of this for some time, and now that our plan is established, it is to be hoped that it can be adjusted and broadened as time goes on to meet the needs of our people. This has been stressed in the President's Page in the March issue of our JOURNAL. Our committee has done well in getting the plan started. More work, however, is to be done to eliminate defects and to improve the service.

By this time we should all be familiar with the organization, the objectives, and the accomplishments of the Tennessee Medical Foundation. It may be in order, however, to repeat portions of previous President's Pages, and to refer to a brochure which we all received recently. The Tennessee Medical Foundation was incorporated July, 1952, in accordance with previous action by our House of Delegates. It is a non-profit chartered institution, and membership is not limited to the medical profession. It is hoped that our members will study this carefully and not only join the Foundation but will also acquaint themselves with its significance so that they can inform their patients and lay groups who might wish to know about it. At present this Foundation, through its committee on Health and Medical Care, and its Field Director, Mr. Clifford Seeber, is making surveys of some of the so-called marginal areas to set up in these areas medical facilities to furnish sorely needed medical care. The Commonwealth Fund has made a large grant to get this important work started. For this aid we are deeply grateful. We, however, must do our part. It is up to our Association to furnish guidance to this important work. This work is one of the answers to the question which we have heard asked so often, namely,—What is the medi-

cal profession doing to offset the trend towards socialism? This work has its beginning at the local level, and it is fostering, encouraging and organizing local communities to solve their own problems of medical care. This is Democracy at work.

These present surveys are to serve as patterns in order that the Foundation may learn how to assist other communities to determine their health needs, their economic potential, and their willingness to co-operate, and then to assist them to organize themselves in such manner as to support and maintain such projects. President Eisenhower in his Health Message to congress has recommended expansion of the Hill-Burton program to include grants-in-aid to such medical facilities. Other State Medical Associations are already engaged in similar projects. This is a realistic approach to the problems of the unequal distribution of doctors, and we can see no greater opportunity to render significant and lasting service to the people of our State.

Indeed, our Association has accomplished much during the past year. To those who have worked so faithfully and loyally on our committees let us express our sincere thanks and deepest appreciation.

For the aid and co-operation we are receiving in our postgraduate efforts we wish to express our appreciation to the Tennessee Division of the American Cancer Society, the Tennessee Heart Association, and the Tennessee Chapter of the National Foundation of Infantile Paralysis. These organiza-

tions have made liberal contributions to our program.

We wish also to give to our Ladies' Auxiliary special recognition. To these ladies we are deeply indebted, for to them must go much of the credit for our success, not only in our Public Service program, but also for the enhancement of the quality and tone of our state meetings.

Our Executive Secretary, Mr. Virgil Foster, leaves us to assume similar duties with the Southern Medical Association. By his faithful service and his devotion to duty through the years he has won the esteem and highest regard of our entire membership. We wish for Mr. Foster continued success in his new undertaking.

To Mr. Ed Bridges, and the entire personnel of the headquarters staff, Miss Willard Batey, Mrs. Alyene Burke, and Miss Margaret Rawls, we extend our sincere thanks. To Mr. Ballentine, our new Executive Secretary, we extend a hearty welcome.

As your outgoing President, let me say again that I am grateful for the honor you have bestowed upon me. To have been your President will be for me a source of inspiration for the remainder of my days. To my successor, Dr. Jack Thompson, I pledge my loyal support, and I am confident that the program of this great Association will be administered effectively under his capable leadership.

Again, I thank you.

Chronic subdural hematoma is a lesion which should come to the mind of the family physician when faced with the story of cortical disturbance and its progression in one of his patients. This is especially true if there was trauma, even of the slightest degree, to the head at an earlier date. It represents a type of cortical deterioration amenable to treatment if recognized early.

SUBDURAL HEMATOMA: DIAGNOSIS AND MANAGEMENT*

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No lesion resulting from trauma may be more elusive regarding definitive diagnosis than chronic subdural hematoma. Occurring in all age groups usually as a result of trauma, the production of clinical signs indicating its presence may be so gradual as to escape detection. The insidious enlargement of the subdural collection from relatively insignificant trauma, perhaps long since forgotten by the patient, or unnoticed by the family, produces a chain of symptoms and signs designed to be baffling to the unwary or uninitiated.

Long recognized as a pathological entity and described by Virchow as chronic pachymenitis hemorrhagica interna, its true relationship to trauma was not appreciated until 1914, when it was clearly established by the studies of Trotter.¹ Since 1925, following the investigations of Putnam and Cushing,² a clearer understanding of the physiological changes occurring in these lesions has been established.

Chronic subdural hematoma is to be differentiated from acute subdural hemorrhage. The latter produces a rapidly progressing symptom complex associated with unmistakable neurological signs that immediately calls attention to the possibility of subdural bleeding. The relationship to trauma being recent, and the rapid development of a deteriorating neurologic picture leaves little doubt that the possibility of an acute subdural hemorrhage exists.

*Presented at the Regional Meeting, American College of Surgeons, Symposium on Trauma, Omaha, Neb., March 1, 1954.

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Clinical Course

On the other hand, the chronic subdural hematoma may follow slight trauma to the head and may produce few if any symptoms other than headache of mild degree, which may be tolerated without complaint. Weeks or months may pass until disturbance in the intellectual sphere is noted. Drowsiness may become obvious, headache may increase, and confusion, memory disturbance, and, occasionally, focal motor convulsive seizures may develop with or without the onset of an obvious hemiparesis. Failing vision may be noted as well as vertigo and ataxia. The state of drowsiness may gradually merge into one of stupor or coma. Concomitant with the symptoms mentioned above, there may be an increase in headache with cervical rigidity and signs of meningeal irritation. Unilateral dilatation of a pupil is often present and may be the only clue suggesting the laterality of the lesion. Papilledema may be present. Involvement of the pyramidal tract may also ensue as the lesion slowly causes additional cerebral compression.

Diagnosis

When there is no clear cut and unmistakable relationship to trauma, a diagnosis of cerebral thrombosis, meningitis, uremia or cerebral hemorrhage is frequently entertained.

It is important to emphasize the fact that no clinical test or examination yet devised will substantiate a diagnosis of chronic subdural hematoma. X-ray films of the skull while frequently helpful will not demonstrate a hematoma and the absence of a fracture does not preclude its presence. A shift in the position of the pineal gland when calcified will suggest the possibility

of a subdural hematoma, but an intracranial neoplasm may produce the same distortion.

Examination of the cerebrospinal fluid may aid in the diagnosis of a subdural hematoma, but once again it is important to point out that abnormalities of the cerebrospinal fluid pressure or the protein content, or the presence or absence of blood does not substantiate, without equivocation, the diagnosis of chronic subdural hematoma. The cerebrospinal fluid may be found to be under normal pressure with the presence of a large hemispheric subdural hematoma. By the same token, the cerebrospinal fluid protein content may be within normal limits, although in the majority of instances it is somewhat elevated. The presence or absence of blood or blood products in the cerebrospinal fluid does not rule in nor rule out such a lesion.

In short, therefore, while the adjunctive methods of diagnosis may be helpful, the clinician is dependent on direct observation for confirmation of the presence of this lesion. The most important feature in the diagnosis is to suspect subdural hematoma in those patients who present the clinical signs and symptoms that may suggest the presence of such a lesion.

Pathology

Chronic subdural hematoma results from bleeding into the subdural space from a tear in one of the bridging cerebral veins. Usually these are the bridging veins entering the longitudinal sinus and at this point they traverse the subdural space and are extremely thin walled, unsupported, and are susceptible to the shearing force of sudden trauma. Other points which may be involved in the production of such a subdural lesion are the bridging veins to the lateral and sigmoid sinus.

The escape of blood into the subdural space is associated with rapid clotting of the blood. The surface of the clot adjacent to the undersurface of the dura is first covered by a connective tissue membrane consisting of fibroblasts. This membrane may vary considerably in its thickness depending upon the age of the hematoma. The inner layer which is applied to the surface of the arachnoid is quite thin and is usually

composed of a single layer of mesothelial cells. Bleeding may occur and cease without the production of major clinical signs. The individual may resume normal activities only to succumb to the progression of symptoms outlined above at a later date. As time passes the subdural clot becomes partially organized, and a breakdown of the blood constituents in the clot occurs progressively so that when the clot has become fully liquefied it consists of a membranous envelope containing the breakdown products of blood in a fluid medium. Since this material has a very high osmotic tension it is generally conceded that fluid is drawn in through the semipermeable membrane by its high osmotic pull and in such a fashion the subdural hematoma "grows." Another possible method by which the hematoma increases in size is by repeated episodes of bleeding, often so slight as to constitute a simple seepage of blood from the partially organized outer membrane.

A non-traumatic variety of chronic subdural hematoma may develop from such a situation through some unknown individual predisposition of the meninges which may favor this type of bleeding. This constitutes the so-called spontaneous subdural hematoma and, except for some difference in the histologic arrangement of the outer membrane, the characteristics of the spontaneous variety are similar in every respect to those of the traumatic type.

It is of great surgical importance to recognize the fact that in as many as one-third of all the cases the hematoma may be bilateral.

Treatment

When the history of trauma cannot be obtained, the diagnosis of this lesion is virtually impossible by indirect means, and one can only assume that an unlocalizable brain tumor or other intracranial expanding lesion is present. There is only one accurate method of diagnosis and this must be done in all cases where the clinical suspicion of such a lesion has been aroused. By the simple placement of perforator burr opening on either side under local anesthesia the dura can be opened and a direct inspection of the subdural space carried out.

If a hematoma is present, the characteristic discoloration of the dura and the dark, olive-green, or black, or bluish-black outer membrane is noted. Upon opening the outer membrane, it may be possible to evacuate the entire liquid contents of the subdural collection leaving only the membranous envelope. This procedure alone will relieve the intracranial tension and will allow for a certain degree of re-expansion of the compressed cerebral hemisphere. Several days should be allowed for this to occur during which time the patients' condition may materially improve and his clinical signs and symptoms may disappear entirely. It should be noted, however, that a fibrous tissue membrane remains which may envelop a large portion of the cerebral hemisphere. Plans should be made, in instances where the membrane is well defined and thick, to remove the greater portion of this constricting fibrous envelope by a major craniotomy within a few days.

By utilizing a small bone flap, removal of the greater portion of the outer membrane may be accomplished by stripping it away from the under surface of the dura. The very thin, fragile, inner membrane is easily peeled away from the cortical surface. (Fig. 1.) There is seldom any significant degree of attachment of the inner membrane to the arachnoid overlying the cortex. With organization of the outer membrane, increasing vascularity between the membrane and the under surface of the dura develops and it is exceedingly important to control all bleeding points from the denuded dural surface. The peripheral portions of the membrane may remain without harm and no attempt should be made to strip the membrane from the most medial portion of its attachment to the region of the sagittal sinus.

Chronic subdural hematoma is a benign lesion and the results following the removal of such a massive hemispheric lesion are usually good. It is not infrequent that the postoperative course, however, is stormy. The re-expansion of the compressed cerebral hemisphere with the associated cerebral edema and deterioration of the patient's condition during this period may well try the fortitude of the surgeon and

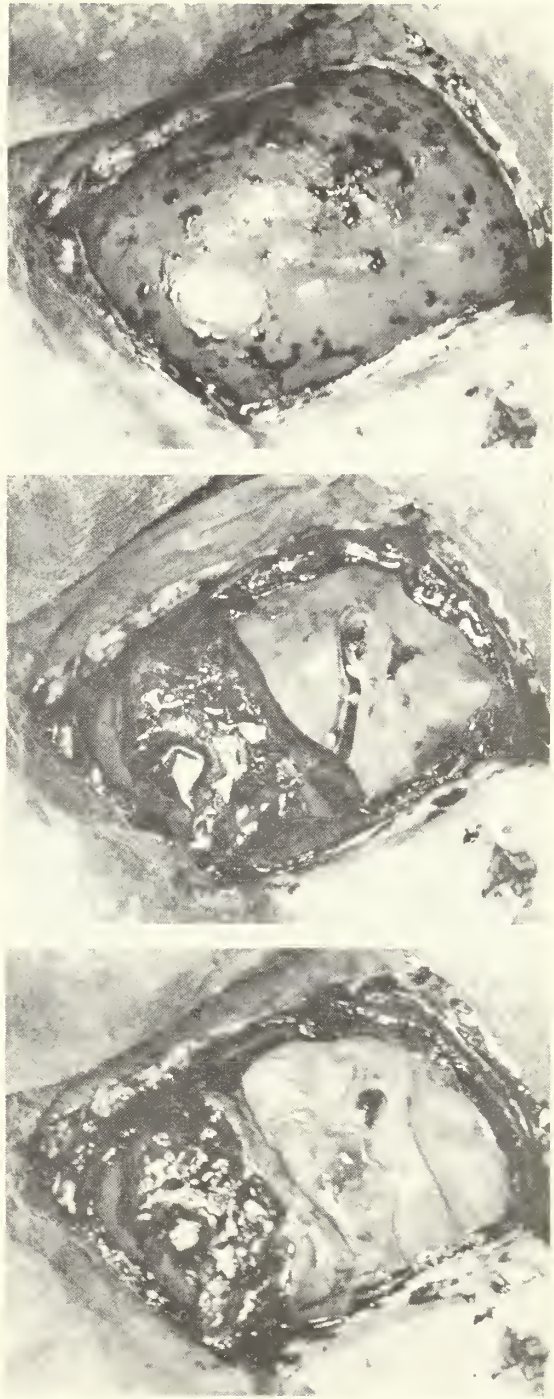


FIG. 1. Stages in the removal of membranes of chronic subdural hematoma.

the family. Fortunately, however, this is usually a transitory period and with proper supportive measures recovery can be anticipated. Occasionally it is necessary to remove the bone flap and reopen the dura to afford an adequate decompression. This

chain of events usually indicates re-expansion of the brain, but it is always necessary to suspect a re-accumulation of subdural fluid, so that it may be advisable to reopen a portion of the wound to confirm the presence or absence of additional hematoma. Once the cerebral edema has subsided the course of events is usually extremely gratifying and full recovery may be expected.

In hematomas of short duration or in those where the outer membrane is poorly organized and remains a very thin connective tissue layer, the simple evacuation of the fluid contents of the attenuated membranous envelope may suffice. The same procedure may be applied to the treatment of the acute subdural hemorrhage where the simple evacuation of the fresh, unorganized clot, is all that is necessary.

It is now an established fact that *subdural effusions*, non-hemorrhagic in character, may occur in infants after a debilitating febrile illness or local inflammatory or infectious condition such as meningitis. The failure of many of these children to return to normal activities may be due to the formation of a chronic subdural effusion. These may be treated in much the same manner as the chronic subdural hematoma and can be confirmed in the infant by diagnostic taps through the coronal suture or fontanelle. If fluid formation is continually present after multiple taps, a burr opening is placed in an appropriate site and an inspection carried out to determine the presence of membranes. If membranes are found, their removal in the fashion described above is effected.

Chronic subdural hygroma is a term which may be applied to subdural effusions, but may also indicate a subdural effusion

which is traumatic in origin in which form it is presumed that fluid gains access to the subdural space through a rupture of the arachnoidal membrane and it is then forced into the subdural space where it is trapped by a flap-valve type of arachnoidal tear, later becoming encapsulated. It is noteworthy, however, that the membranes about a chronic subdural hygroma are invariably thin and attenuated and never possess the organized character of the outer membrane of the chronic subdural hematoma. There is no way to diagnose this lesion except to find it by the methods described for subdural hematoma, although the treatment remains precisely the same.

Summary

It is well to consider chronic subdural hematoma in those cases, regardless of age group and without respect to history of trauma, where conscious levels show progressive deterioration without known cause, and without regard to the X-ray findings or spinal fluid examination. Chronic subdural hematoma can be diagnosed with certainty only by direct inspection. This requires a simple operative procedure utilizing local anesthesia and without significant surgical risk. Alertness to the possibility of this intracranial lesion will undoubtedly result in an increased number of such cases being disclosed.

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ERRATUM

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The feeding formula should include also 4 eggs.

Auto accidents do not take place selectively in medical centers. The evaluation and proper care of injuries to the cervical spine is of great importance not only for the immediate care of the patient, but in the prevention of future disability. The authors have covered these points in a concise and simple manner.

INJURIES OF THE CERVICAL SPINE

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Injuries of the cervical spine are not rare today and we must be prepared for even a larger number of cases in this era of highway congestion and high speed travel. It is proposed here to discuss the less complicated types of cervical spine injury and their management. Only such injuries as may occur without neurological damage are considered, since the presence of spinal cord or nerve root damage introduces a complexity beyond the scope of this discussion.

It is particularly important that the physician who sees the patient immediately following a cervical spine injury be well versed in the basic problems of diagnosis and management. An exact appraisal of the situation is necessary before other injuries of less consequence may be considered. An erroneous initial diagnosis may place the patient in jeopardy or add to the difficulty of treatment. Cervical spine injuries are often overshadowed by more apparent injuries, such as fractures of the face, skull or long bones. Loss of consciousness and shock may further obscure the diagnosis. Without attempting to resolve the lack of unanimity concerning the treatment of complicated injuries of the cervical spine, there will remain a great number of patients who suffer a major injury to the cervical spine without damage to the nervous system. In this group of patients, the prospects for functional recovery are good if the problem is recognized and the management is proper.

The outline which follows is intended as a review for physicians who are infrequently called upon to treat such injuries yet who, at times, must necessarily make the initial decisions regarding therapy. Many

injuries of the cervical spine may be successfully treated with a minimum of specialized equipment and clinical facilities. Some require the full range of operative and consultation services available in the larger medical centers. The proper selection of those cases which require only simple conservative treatment imposes great responsibility upon the physician, but by accurate evaluation and the application of sound physiological and mechanical principles, the patient with a neck injury need not be a therapeutic enigma.

The suggestions for treatment which are made here come from the clinical experience of one of us (E.M.R.) during the past ten years or more. It will be observed that horizontal halter traction is seldom indicated and is never routine for cervical injuries. Dissatisfaction with the end results of horizontal or bed traction in most types of injury has led to the use of a firm roll beneath the neck to produce and maintain the extended position of the cervical spine in preference to head-halter or skeletal traction. It is quite difficult to avoid aggravation of a flexion deformity when longitudinal traction is applied, but with a firmly rolled towel beneath the neck the desired degree of extension of the cervical spine may be achieved without an unduly difficult technique of nursing care.

Sprain

This injury is characterized by discomfort both at rest and upon movement with diffuse tenderness and variable degrees of limitation of motion. The X-ray examination is negative. This diagnosis should be made with caution since it depends upon the exclusion of more serious injury. The prognosis is good and the symptoms should subside within a few days. A cervical collar

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provides symptomatic relief, but rest in bed offers the most satisfactory treatment.

Whip-Lash Injury

This is an extensive soft tissue injury with no demonstrable change on the X-ray examination. It is most frequently confused with a simple sprain. It is produced, for example, by an impact from behind while seated in a car; the head travels back, then snaps forward, producing an injury to the ligaments, facet joints, and intervertebral disc structures. The mechanism of injury should suggest the diagnosis. There may be symptoms of nerve root irritation. At least three weeks rest in bed with the cervical spine held in a gently extended position is advised, with the patient being allowed to turn from side to side as tolerated. If symptoms persist after adequate time for healing of the soft tissues, the possibility of herniation of a cervical intervertebral disc must be considered. After adequate treatment and apparent recovery, the prognosis remains guarded since the manifestations of disc herniation or traumatic arthritis may be delayed for months.

Momentary Dislocation with Spontaneous Reduction

The patient will usually complain of pain, muscle spasm, and limitation of motion of the neck upon examination, but in addition will experience transient numbness and weakness in the extremities. The initial X-ray study is negative, and there should be no forcible manipulation during this examination. At least two months treatment in bed with the cervical spine in a position of extension is required. The firmly rolled towel again is adequate in most instances to maintain the spine in extension, but when more forcible extension is desired, folded sheets may be placed beneath the mattress to elevate the dorsal spine and shoulders and allow the weight of the head to increase the extension force. During the course of treatment, the patient is allowed to be turned to each side, but flexion of the neck is avoided. Prior to the resumption of full activity, the X-ray examination should be repeated to determine the stability of the injured area. A lateral view of the spine

with the neck in flexion is most helpful at that time.

Compression Fracture of the Vertebral Body

In this injury all movements of the neck are restricted by painful muscle spasm. There will be compression of the anterior margin of one or more vertebral bodies on X-ray examination, and the facet joints remain opposed. The neural arches are intact. After it has been determined that the neural arches and the facet joints are intact, one may proceed with extension over a firm roll as rescribed above, relying upon these structures to provide the integrity of the spinal column while the compressed vertebral bodies are widened toward their normal height. It should be mentioned that the firmly rolled towel must not be allowed to flatten and should be about the size and shape of a rolling pin. The bed must not sag. If necessary, bed boards should be employed.

Treatment requires six weeks or more in recumbency. The patient is allowed to turn toward both sides, facilitating nursing care. From the first days of treatment, the patient should be required to perform strong contractions of the extensor muscles of the neck, forcibly drawing the occiput toward the base of the neck. This exercise not only maintains the strength of the extensor muscles but also effectively assists in the maintenance of the desired distraction of the anterior vertebral height. If the patient should be allowed to resume the erect position before adequate healing has occurred, there will be a recurrence of the compression. A cervical collar or brace will not prevent this complication. A cervical collar or brace is used, however, for several months after the patient has become ambulatory, and the extension exercises continued.

Fractures of the Neural Arches or Articulations

These injuries require special consideration since the location and extent of injury is often obscure in the initial X-ray examination. Right and left oblique views are frequently helpful. If it can be determined that the neural arch or facet joints are no

longer intact, forcible extension or flexion is to be avoided, for these forces may cause increased displacement of the fractures. Prolonged immobilization in recumbency will usually lead to union of the fractures and satisfactory functional result.

Flexion Type of Dislocations

At the moment of greatest flexion deformity, the facet surfaces of the superior vertebra override their inferior opposing joint surfaces and come to rest anteriorly and superiorly, producing a fixed flexion displacement of the superior vertebra. When both superior facets are dislocated, the neck is held in position of flexion. When only one facet joint remains displaced, the head is turned to the opposite side. This injury is so stable that it is remarkably painless and may arouse less suspicion than many painful simple sprains. Untreated, it becomes quite painful and disabling. These injuries often require skeletal traction and frequently require operative treatment. This is a type of injury which demands prompt, definitive treatment, for within a few days there will have occurred enough fibrosis and fixation that any subsequent treatment will be much less satisfactory than if it had been carried out within the first 72 hours. For this reason, it is inadvisable to undertake treatment unless the physician is prepared to carry out a full range of operative and immobilization measures, and the patient should be treated in a medical facility where the reduction and fixation may be carried out by operative means, if necessary.

Atlas-Axis Fractures and Dislocations

These injuries are not well visualized on the standard antero-posterior and lateral X-ray views but require additional open-mouth antero-posterior views. At times, it is difficult to obtain these views on the injured patient, but the information obtained is worth the time and attention required. The physician should personally protect the patient from additional injury by supervising the examination and making certain that the X-ray equipment, not the patient, is moved to obtain the necessary views. When produced by flexion forces, the injury

moves the atlas anteriorly with disruption of the articulating ligaments. The odontoid process of the second cervical vertebra may or may not be fractured. In extension injuries the neural arches of the first and second cervical vertebrae will be fractured. With blunt injuries to the vertex of the skull, the first cervical vertebra may be fractured at several points along its circumference. While the flexion type of injury has been found to respond well to prolonged bed care with the cervical spine in a position of extension, the other types require skeletal traction until bony stability is accomplished. A word of caution is in order concerning all forms of traction for injuries of the high cervical spine. Traction of less than 5 pounds is often adequate, and excessive amounts of traction may cause further displacement with possible neurological damage. Maintenance of position, rather than forcible distraction, appears to be the key to successful treatment of high cervical injuries.

Discussion

Lumbar puncture is seldom of value in cases of cervical spine injury without neurological damage. In cases of questionable spinal cord injury, urinary bladder function provides a rapid physiological test of spinal cord function. If the patient can void spontaneously, the presence of residual urine by catheterization may indicate that mild trauma has occurred to the spinal cord in a degree too small to produce obvious weakness or sensory change.

Manipulative reductions are described in the literature and have a recognized place in the treatment of cervical spine injuries, but they are not for the occasional operator and may greatly aggravate the injury.

Adequate maintenance of an airway is often the most important single aspect of the immediate care of the patient with a severe injury to the cervical spine. Tracheotomy should be performed without delay if there is difficulty in keeping the airway clear of secretions by aspiration. When associated injuries require general anesthesia for treatment, a tracheotomy, performed prior to induction, will eliminate the necessity of manipulation of the head or neck in the insertion of an endotracheal tube.

In cases of severe injury of the cervical spine the use of braces, cervical collars, or plaster casts should be reserved for the late convalescent period. Any of these devices will allow some degree of motion of the spine and at best they offer support to prevent reinjury from an unexpected fall or thrust. In cases of minimal injury they may be useful for symptomatic relief from painful motion. They should not be expected to perform the function of immobilization in the presence of instability when the patient is in the erect position.

Summary

Several types of cervical spine injuries uncomplicated by neurological damage have been reviewed and suggestions made

concerning their early definitive diagnosis and treatment. The value of employing a firmly rolled towel beneath the neck to obtain immobilization in the extended position has been described. Dissatisfaction with the routine use of elongation traction by head-halter or skeletal traction has been expressed.

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Though the electrocardiogram is a most valuable item in the evaluation of myocardial function, it is accepted all too frequently as the final criterion of health or disease. Fatal disease shortly after repeatedly negative tracings is not uncommon. Exercise tolerance tests may provide objective evidence of coronary disease in patients suspected of angina and having normal electrocardiograms.

THE TWO-STEP EXERCISE TEST IN THE DIAGNOSIS OF CORONARY ARTERY DISEASE

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Pain in the chest and upper extremities often presents a difficult diagnostic problem. This pain may be of minor importance or may have serious implication. Anginal pain, in the presence of established coronary artery disease, is frequently atypical. Both cardiac and extracardiac pain may have similar locations and the same areas of referral. Gallbladder disease, hiatus hernia, cervical disc syndrome, cervical arthritis, neuritis, and various chest conditions give rise to precordial pain. The protean nature of angina pectoris is such that the diagnosis, in many cases, cannot be made with certainty. The history is usually the principal informative clue.

The use of nitroglycerine may not be specific in the diagnosis of coronary insufficiency since this drug may relieve pain of non-cardiac origin as well. Anginal pain is of very brief duration. The diagnostic and therapeutic value of nitroglycerine may never be adequately tested.

In approximately 40 per cent of patients who have coronary artery disease with myocardial insufficiency, the physical examination, the X-ray and fluoroscopic examinations, and the resting electrocardiogram are normal. Therefore, the aid of other diagnostic tests has been sought. Various procedures have been devised for testing the adequacy of coronary flow since deviations from the normal electrocardiogram are known to occur during anginal attacks. Feil and Siegal¹ showed these changes could be induced by exercise. Thus the exercise test

has been accepted as an objective means of establishing the presence of coronary insufficiency.

Master² first standardized the "two-step" exercise test. Initially, a measured amount of exercise was performed in one and one-half minutes. His test was later modified so that double the amount of exercise was performed in three minutes.³ This modification was found to elicit electrocardiographic evidence of coronary insufficiency in a greater percentage of affected patients, yet did not cause an appreciable number of false positive results.

The exercise test is of value as a routine procedure only in selected patients. There are many instances in which the diagnosis of coronary insufficiency is evident from the history, the electrocardiogram, or from therapy. In the younger age groups a history compatible with coronary insufficiency is often overlooked. Recent post-mortem studies have shown an unsuspected incidence of coronary artery disease in relatively young individuals.

Methods

The two-step exercise test is employed because of its simplicity and the need of very little specialized equipment (electrocardiographic machine and a stairs of two steps). The test is relatively free from untoward reactions. It closely simulates the type of exertion that an individual performs in his daily activities.

The test requires two steps—each nine inches high. The number of trips is calculated from Master's original chart,⁴ based

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on the patient's age, weight and sex. However, we have doubled the number of trips, and have taken three minutes to carry out the test. This is known as the "double two-step test." In young individuals, we occasionally use 50 trips (or 25 round trips) on the stairs. When 50 trips are employed three and one-half minutes are allotted for the performance. (Fig. 1.)

The following precautions are observed: (1) A careful history is taken to rule out the possibility of recent myocardial infarction. (2) An electrocardiogram is made just prior to the test. (Stigmata of coronary artery disease obviate the need for the test.) (3) If during the exercise the patient complains of precordial distress, weakness, or severe shortness of breath, the exercise is immediately stopped and electrocardiograms are obtained. (4) A physician in attendance is mandatory. This test should not be carried out by a technician or nurse.

Electrocardiograms are made immediately after exercise, and at two minute, five minute and ten minute intervals. For these records, only the three limb leads and three chest leads (V_1 , V_4 and V_6) are obtained. All tracings are recorded with the patient reclining.



FIG. 1

Interpretation of Results

Following exercise, electrocardiographic change will occur in normal persons as well as in those with coronary artery disease. In this latter group changes will be more marked. Abnormal changes usually occur in the record taken immediately following exercise. There are times in which the greatest deviations are noted in the two or five minute tracing. Within ten minutes the record should have returned to its pre-exercise contour.

The following changes are considered to be diagnostic of coronary insufficiency: (1) ST segment depression of 0.75 mm. or more in either of the limb leads, 1.5 mm. or more in the chest leads. (The chest positions are marked in order to assure the same placement of the electrode. The reference point used for ST segment deviations is the isoelectric point, i.e., the beginning of the P wave. If significant tachycardia develops, the PQ segment is used as the reference point for ST depressions); (2) T wave flattening and the occurrence of inverted or diphasic T waves; (3) appearance of intraventricular block or auriculo-ventricular block; (4) the occurrence of marked arrhythmia (frequent ventricular premature systoles, auricular fibrillation or flutter) is suggestive of a positive test.

As a rule, ST depression or T wave change in more than one lead is needed to confirm the diagnosis. A single abnormality, unless marked, should not be considered conclusive.

Case 1. F. C., a 43 year old factory worker, had a 3 year history of skipping of his heart. This irregularity occurred upon lifting boxes, when walking rapidly, and while working. The attacks had resulted in extreme nervousness. Fleeting precordial pain and weak spells were frequent. Numerous electrocardiograms had been normal. He had complained of vague epigastric pain. Gallbladder and gastro-intestinal X-rays were negative.

Physical examination showed no abnormality. The effect of nitroglycerine could not be evaluated because of the brief duration of pain. A pre-exercise electrocardiogram was normal. Following exercise marked ST segment depression occurred in all 6 leads. After 5 minutes the T waves became diphasic in the chest leads; 10 minutes after exercise the record had returned to normal (Fig. 2).

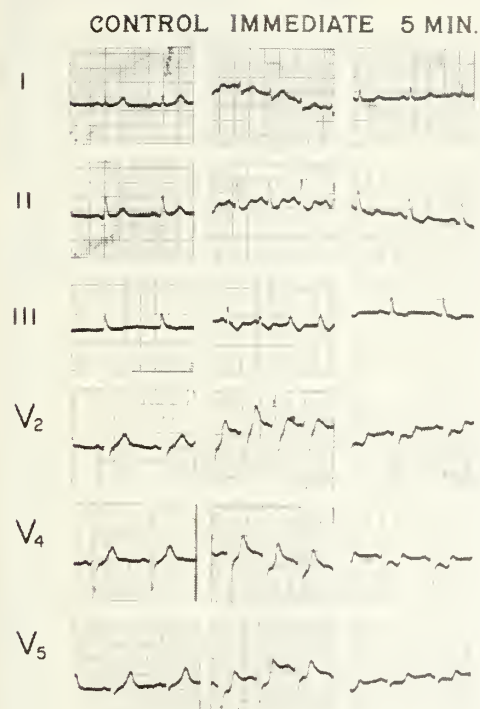


FIG. 2. Case 1. 43 year old male. Normal resting electrocardiogram. Marked ST depression immediately after exercise. T-wave change 5 minutes after exercise.

Comment. Although told repeatedly in the past that his heart was normal, this patient had coronary insufficiency. Avoidance of all strain lessened the number of attacks. Recently, with occasional prolonged pain, nitroglycerine gave prompt relief.

Case 2. Mrs. E. P., a 53 year old widow, complained of fluttering and jumping of the heart and pain in both arms. These symptoms had been present for 7 years. Quinidine had been used with unsatisfactory results. She was nervous and worried about heart disease. Her two husbands died of myocardial infarctions, each having had angina pectoris for a period of years. Three years previously a duodenal ulcer had been demonstrated and all symptoms had been attributed to the ulcer.

Physical examination was non-contributory. The resting electrocardiogram was normal. Immediately following exercise there was flattening of the T waves in the limb leads and the T waves in the precordial leads became markedly smaller. In the tracing taken 2 minutes after exercise the T waves were diphasic in leads 2 and 3. In 10 minutes, the record had reverted to normal (Fig. 3).

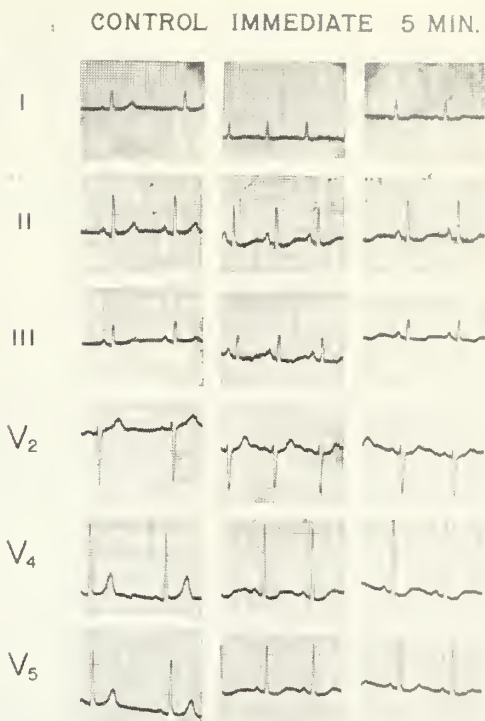


FIG. 3. Case 2. 53 year old female. Normal resting electrocardiogram. Flattening of T-waves following exercise.

Comment. Subsequently, the use of nitroglycerine controlled all pain.

Case 3. L. S., 59 year old labor leader, had experienced periodic shortness of breath, palpitation and rapid heart action. Vague substernal pain had been present for 1 month. A non-toxic goiter had been removed 36 years previously. The stress of his work plus two recent operative procedures was a factor in his illness.

The initial physical examination was negative. The resting electrocardiogram was normal. A double two-step test did not reveal any evidence of coronary insufficiency.

Comment. On subsequent examination this patient was found to have a large substernal nodular goiter which compressed the lateral wall of the lower part of the trachea. Since removal there has been no recurrence of previous symptoms.

Conclusions

It is our experience that the two-step exercise test is often a valuable aid in the differential diagnosis of coronary insufficiency. A negative test does not entirely exclude coronary artery disease. However, it does emphasize the necessity for further

diagnostic studies to determine the cause of pain referred to the chest and upper extremity. False positive tests are rare. Their occurrence will be minimized if the criteria that we have outlined are followed. This procedure should not be attempted when there is definite evidence that coronary artery disease exists.

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Paradoxical Hyperglycemia in Diabetic Patients Treated with Insulin. G. T. Perkoff and F. H. Tyler. *Metabolism* 3:110, 1954.

Insulin induced hypoglycemia initiates a rapid hyperglycemic response which may persist as long as five or six days. In certain "brittle" diabetic patients excessive insulin causes hypoglycemia; larger amounts of insulin will then paradoxically cause hyperglycemia. This results in deterioration of regulation. Reduction of the insulin dose ameliorates the hyperglycemia and glycosuria.

The clinical characteristics of this phenomenon are: (1) deterioration of diabetic regulation on increasing insulin doses, (2) infrequent clinical hypoglycemia reactions, (3) cyclic glycosuria, (4) improved diabetic regulation on reduced insulin dosage.

The frequency with which paradoxical hyperglycemia occurs in clinical practice is difficult to determine. Somogyi observes it frequently, others infrequently. Many diabetic patients require large doses of insulin without manifesting paradoxical hyperglycemia. (Abstracted for the Tennessee Diabetes Association, by R. F. Ackerman, M.D., Memphis.)

The hormones, ACTH and Cortisone, have been used, often empirically, in almost every disease in medicine for which there is no specific method of management or therapy. It has often then represented a "shot in the dark" approach to treatment. The author has reviewed these "shots" but has indicated often the "not proven" verdict. The reader must remember that other than as substitution therapy and their usefulness in shortening the course of certain self-limiting diseases (urticaria, etc.), the use of these hormones is in the main experimental or, at most, ameliorative and not curative.

ACTH AND CORTISONE THERAPY: A REVIEW

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It is our purpose in this review to list and briefly discuss the conditions in which ACTH and cortisone have been employed. Some of the problems associated with therapy and the means of modification or prevention of these problems are presented, along with contraindications to therapy. Brevity of exposition has been a consistent objective, and a concise summary of each topic has been attempted. In considering this hormonal therapy, it is to be realized that these potent drugs do not cure any condition. Nevertheless, they are capable of suppressing the symptoms of many different diseases and their use will continue to be widespread.

Collagen Diseases

Rheumatoid Arthritis. Patients with this disease were among the first to be treated with ACTH and cortisone. The clinical response is often dramatic in the acute form of the disease, with alleviation of the associated pain, tenderness, and other signs of acute inflammation. The chronic and sub-acute stages of the disease may also be favorably influenced by these hormones, but the primary pathology is not altered and long-standing and irreversible joint changes are not affected.¹

Rheumatic Fever. Though ACTH and cortisone do not cure this condition they do suppress the symptoms and signs, especially in the acute phase, and most authorities agree that cortisone should be given until

the natural course of the disease has subsided. Relapse is apt to occur after termination of treatment and, if so, therapy should be reinstituted. In patients with chronic rheumatic heart disease and in those with associated valvular defects the hormones have not proven to be of material benefit. If heart failure is present their use is hazardous because of the increased sodium ion retention which increases edema.

To summarize, the benefit of hormonal treatment in rheumatic fever is limited but should be given to patients suffering from their first or early attacks, in the hope of preventing residual valvular damage. The more chronic cases and those with valvular lesions should be evaluated individually with respect to the indications for cortisone therapy.²

Lupus Erythematosus Disseminata. Before the discovery of cortisone patients with this disease had an extremely poor outlook. Now, however, though no cure is effected, they are made much more comfortable and are able to lead a fairly normal life in some instances. Unfortunately, the clinical improvement observed is not paralleled by improvement in the underlying pathology and the patients usually succumb.

Dermatomyositis. Prompt and dramatic relief of symptoms may be expected when ACTH or cortisone are used early in the course of the disease. When the disease is long-standing little benefit is derived from hormonal therapy.

Scleroderma. Slight improvement has been reported in this condition following the use of ACTH or cortisone, but most in-

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investigators do not believe that the drugs are of great value.

Periarteritis Nodosa. The symptoms of this bizarre syndrome are alleviated if cortisone or ACTH is administered early. If widespread vascular damage is already present, however, their use may aggravate the condition by increasing the tendency to vascular thrombosis.

Allergic Diseases and Hypertensitivity States

Bronchial Asthma and Hay Fever. The symptoms produced by these conditions are promptly and dramatically relieved by ACTH or cortisone, but most authorities agree that these agents should be held in reserve for the unresponsive case or for the more severe attacks.

Allergic Dermatoses. There have been numerous reports praising the efficacy of ACTH or cortisone in the treatment of allergic skin disorders, and early investigation using hydrocortisone acetate ointment has proved promising in the field of infantile eczema. Cortisone will cause a prompt disappearance of the skin rashes due to penicillin and to certain other medications.

Endocrine Disorders

Addison's Disease. The indication for cortisone in this condition is apparent. However, in some cases desoxycorticosterone must be administered also to produce a maximum sodium ion retention.

Panhypopituitarism. Though rare, this disease is amenable to therapy with ACTH or cortisone. Other hormones such as estrogens, androgens, and thyroid substance are also indicated, since the pituitary is not exerting its normal influence on the gonads or the thyroid.

Adrenogenital Syndrome. By suppressing the production of endogenous ACTH, cortisone has proven to be of value in the treatment of the adrenogenital syndrome. Wilkins has treated several patients with this condition with cortisone and his results have been most favorable.

Infectious Diseases

Generalized Peritonitis. Investigators have recently presented an interesting report of three children with ruptured appen-

dices and associated purulent peritonitis who were given cortisone in conjunction with antibiotics.⁴ A marked and prompt diminution in toxicity and a shorter period of morbidity ensued. More clinical investigation is needed to make any final conclusion, but such reports are promising.

Purulent Meningitis. In patients with meningococcal meningitis, where there is always a danger of Waterhouse-Friderichsen syndrome, the prophylactic use of cortisone may be indicated. A more prompt clinical response has been observed in other types of purulent meningitis when cortisone was administered concurrently with chemotherapy.

Pneumococcal Pneumonia. Admittedly, most patients with pneumococcal pneumonia do as well with appropriate antibiotics. However, in very debilitated patients or in unresponsive pneumonias, ACTH and/or cortisone may be lifesaving.

Typhoid Fever. Though this is a rare disease today there have been three cases recently at The John Gaston Hospital in Memphis. The few reports in the literature appear to show that cortisone, along with Chloromycetin, produces a more rapid regression of the disease than when Chloromycetin is used alone.

Tetanus. On the assumption that cortisone has a non-specific antitoxic effect on body cells it has been administered along with antitoxin and other routine treatment to a patient with a severe case of tetanus. In this instance the patient survived the usually fatal disease and the physicians treating him believed that the cortisone was lifesaving.⁵ Another case is reported in which ACTH was given to a patient in severe opisthotonos and having recurrent generalized tetanic convulsions. He made a rapid and prompt improvement and became able to swallow shortly after the administration of ACTH but later began to regress. Assuming that the adrenals were becoming unable to respond, cortisone was ordered. However, before the drug could be given the patient had a fatal episode of laryngospasm. Autopsy revealed abnormally small adrenals and appeared to substantiate the theory of the investigators that adrenal insufficiency was present.⁶ Nevertheless, the value of

cortisone and ACTH in this condition has yet to be defined.

Metabolic Conditions

Gout. Cortisone co-administered with colchicine during the acute phase of gout has been shown to be beneficial, but after the acute symptoms subside cortisone should be gradually withdrawn.

Idiopathic Hypoglycemia. With fairly small doses of ACTH this disease of children can be effectively controlled.

Hematologic Disorders

Acute Leukemias. ACTH and cortisone have been used extensively in the treatment of the acute stage of the various leukemias. The results have been gratifying in many cases in that the patients sometimes experience a complete remission of symptoms. However, no cures have been reported and invariably the patient succumbs to the disease.

Chronic Leukemias. In general, other forms of treatment have been found to be more efficacious, but transitory improvement has been observed in many patients following the use of ACTH or cortisone.

Hodgkin's Disease. The present day opinion of most authorities in regard to the use of ACTH or cortisone in this condition is that other measures such as roentgen therapy or nitrogen mustard are of greater value. Some workers have noted transitory improvement while the patients are taking cortisone, however, and if other therapy fails, a trial with cortisone is indicated.

Multiple Myeloma. Transient improvement can be produced in about fifty per cent of the cases of plasma cell myeloma with ACTH or cortisone.

Idiopathic Thrombocytopenia. ACTH and cortisone are of value in "weathering out the hemorrhagic storm" frequently observed in this blood element dyscrasia. Heretofore, splenectomy was often performed as an emergency procedure which entailed a greater operative mortality. With the use of ACTH or cortisone, however, the hemorrhagic crisis can be controlled in most cases, and then splenectomy can be done during a quiescent phase of the disease.

Secondary Thrombocytopenia Purpura.

As implied by the name of the condition, the bleeding phenomena here is due to the depletion of thrombocytes which in turn is caused by mechanical displacement of the thrombocyte precursor, the megakaryocyte, from the marrow. A few of the diseases in which this condition may exist are leukemia, pernicious anemia, hypochromic anemia, aplastic anemia, carcinomatosis, tuberculosis, and lymphomatosis. ACTH or cortisone will reduce this bleeding tendency in many instances.

Acquired Hemolytic Anemia. ACTH and cortisone have significantly improved the prognosis of the patients with this condition. The beneficial action derived from their use is believed to be due to a non-specific blocking effect on the red cell hemolyzing auto-antibodies present in the patient's blood.⁷

Anemias Due to Chronic Bone Marrow Failure. Patients with erythroid hypoplasia, myelosclerosis, or refractory anemia with a normally cellular marrow have been benefited following the administration of ACTH or cortisone.

Erythroblastosis Fetalis. ACTH with and without exchange transfusion, has been shown to be of value in the treatment of erythroblastosis fetalis. The action of the hormone here apparently is to neutralize the red cell hemolyzing antibodies present in the infant's blood.

Ophthalmologic Conditions

Inflammatory Diseases. Inflammatory reactions of the eye of both known and unknown etiology have been successfully treated with ACTH or cortisone in a vast majority of cases.

Neurologic Conditions

Myasthenia Gravis. Some investigators have reported transient improvement in patients with this neurologic disorder after cortisone therapy was instituted, but in general the results have been poor.

Bell's Palsy. This disease affecting the seventh cranial nerve and causing a unilateral peripheral facial paresis or paralysis is probably of viral etiology, and recently cortisone has been observed to be of sub-

stantial value in the treatment of this condition.

Guillian-Barre Syndrome. There has been some evidence that cortisone is beneficial in the treatment of this disease.

Diseases of the Alimentary Tract

Chronic Ulcerative Colitis. Most authorities agree that improvement occurs, particularly in the acute phase, following the use of ACTH or cortisone in this condition. Nevertheless, no changes are noted in the primary pathological process, and the more chronic cases are less responsive to hormonal therapy.⁸

Liver Disease (Hepatitis). If the condition of the patient seems to be growing worse in spite of all other forms of therapy, a trial with ACTH or cortisone is indicated, since there have been reports of favorable results with hormonal therapy.

Pancreatitis. The prognosis of the patient with severe pancreatitis is poor indeed, and since cortisone has appeared to be of value in a few isolated cases its use would seem to be indicated in a patient who seemed to be dying despite all therapy.

Anogenital Pruritis. Except in those cases without cutaneous involvement, i.e., the type seen in neurotic individuals, or in cases where there is a proctologic lesion such as a fissure or hemorrhoids, cortisone and ACTH are of value in the treatment of intractable cases.

Dermatologic Conditions

Pemphigus. All three forms of this serious skin disorder respond dramatically in most cases to the administration of ACTH and or cortisone.

Psoriasis. Improvement occurs in patients with this condition until therapy is discontinued, then relapse often occurs.

Miscellaneous Conditions

Boeck's Sarcoid. There is fairly uniform agreement that cortisone and ACTH are beneficial in the treatment of Boeck's sarcoid. Fresh lesions have been observed to respond more dramatically than chronic ones.

Nephrotic Syndrome. In severe cases a trial with ACTH or cortisone is warranted

in hopes of producing a withdrawal diuresis. However, if there is associated azotemia the use of the drugs is hazardous and usually of little value.

Trichinosis. This disease is rare today but when it is diagnosed the treatment of choice is cortisone.

Bursitis. Systemic cortisone and ACTH as well as intra-articular hydrocortisone have been used with gratifying results in the treatment of bursitis.

Osteoarthritis. Cortisone and intra-articular hydrocortisone have proved to be of value in the alleviation of the symptoms associated with degenerative joint disease.

ACTH and Cortisone in Surgery

Homologous and Autogenous Skin Grafting. ACTH and cortisone were at one time thought to prolong the survival of homologous skin grafts. Later evidence, however, proves that this is not true. Their use in the field of skin grafting is unwarranted on the basis of the evidence at hand.

Burns. The accumulation of clinical material is not easily evaluated in regard to the value of ACTH and cortisone in burned patients. Thus far it has not proved to be of great benefit.

Preoperative and Postoperative Surgery for Removal of Adrenal Tumors and Bilateral Adrenalectomy. When an adrenal tumor is diagnosed and surgical removal is proposed a possibility of atrophy of the opposite adrenal must be borne in mind. Substitution therapy with cortisone and or adrenal extract must therefore be given both preoperatively and postoperatively in order to prevent the postoperative occurrence of an Addisonian-like crisis. An outline of the exact treatment to be employed in such cases has been presented by Thorn.⁹

When bilateral adrenalectomy is performed for hypertension, or as a palliative measure in prostatic or mammary carcinoma with widespread metastases, the use of cortisone as maintenance therapy is mandatory.

Preoperative Use in Malnourished Patients. Recently an interesting paper on the use of ACTH and cortisone in surgery has been presented by Cole et al.¹⁰ They report two cases, one a female with cancer

of the rectosigmoid perforating into the uterus whom the surgeons were unable to prepare satisfactorily for operation. At the first attempt no operative procedure could be accomplished because the patient responded very poorly to the anesthesia. She was subsequently given ACTH, her condition improved rapidly, and soon operation was deemed possible without too great a risk. Anterior resection of the tumor was performed and an uneventful postoperative course ensued.

Another patient, a male with carcinoma of the lung, was given ACTH after all other therapy had failed to render him, in the judgment of his physician, a reasonable operative risk. The response to the drug was again dramatic. In a short time he was considered to be in good enough condition to undergo major surgery, and a pneumonectomy was performed with no operative or postoperative complications. Although this report is very interesting and promising, definite conclusions cannot be made in regard to the use of ACTH or cortisone in all such patients.

Malignant Exophthalmos. Some patients with exophthalmic goiter actually exhibit an increase in the protrusion of the eyes following thyroidectomy, and the condition can become severe enough to impair the eyesight. ACTH or cortisone have been observed to cause a regression of the exophthalmos in some of these patients.¹¹

Thyroid Crisis. Though crisis is a rare complication of toxic thyroid disease today, the use of ACTH or cortisone as part of the therapeutic regimen in such cases has proved to be of great value.

Thyroiditis. In acute and subacute thyroiditis cortisone has been shown to be of material value and its use in this condition is becoming increasingly more widespread.

Osteitis Pubis. This rare but painful complication of retropubic prostatectomy has been shown to respond to oral cortisone therapy in a vast majority of cases and thereby the treatment has become greatly simplified.

Undesirable Side Effects and Problems Associated with the Use of ACTH and Cortisone

Most potent therapeutic agents have un-

desirable side effects associated with their use and ACTH and cortisone are no exceptions to this rule. There are means of ameliorating these undesired effects, however. The following is a list of the harmful effects and a means for their modification or prevention is offered:¹²

1. *Edema and hypertension.* To prevent or modify these hazards, sodium ion restriction to levels of 300 milligrams or less of salt per day is often necessary.

2. *Steroid diabetes.* Limitation of carbohydrate intake and insulin therapy in severe cases are means of combating and controlling this complication of therapy.

3. *Masking of the usual clinical picture.* Often the euphoria produced by the drugs, plus the antipyretic action in patients with fever, masks the clinical picture and the unwary physician is led to believe all is well when in reality the fundamental pathology is unaltered or may even be spreading.

4. *Gastro-intestinal complications.* The possibility of gastro-intestinal ulcer perforation, ulcerative lesions in any part of the G. I. tract, and gastro-intestinal hemorrhage are alarming complications associated with the use of ACTH or cortisone. Therefore, a strict anti-ulcer regime in patients with a history of peptic ulcer along with close observation keeping these hazards in mind is mandatory.

5. *Cushing's syndrome.* This extreme form of hyperadrenocorticism is most often a complication in patients under prolonged therapy, and the obvious measure to be taken is reduction of dosage of the hormone.

6. *Precipitation of psychosis.* If mental aberrations develop under therapy the drug should be discontinued or the dose should be lowered.

7. *Osteoporosis.* This condition is characterized by a defect in bone matrix production and to combat it a high protein diet, testosterone, calcium, phosphorus, and vitamin D are indicated.

8. *Muscle weakness.* This phenomena is due to a deficiency of tissue potassium and the preventive measure is dietary potassium in the form of potassium chloride tablets.

9. Acne, hirsutism, loss of head hair, pigmentation, "mooning" of the face, and alter-

ation of menses are common complications of ACTH or cortisone therapy. Nevertheless, if the disease treated is the lesser of the two evils then the above must be accepted.

Contraindications to Use of ACTH and/or Cortisone

Tuberculosis. Patients with active or quiescent tuberculosis should not be given ACTH or cortisone except under the strictest clinical and laboratory supervision.

Diabetes. Unless the hormones are deemed absolutely necessary their use in patients with diabetes mellitus is contraindicated because they aggravate the condition.

Cardiac Failure. Because the retention of sodium ion is enhanced by ACTH or cortisone, these agents should not be employed in patients with cardiac insufficiency unless their use is mandatory.

Peptic Ulcer. The possibility of perforation of the ulcer makes the use of ACTH or cortisone extremely hazardous in patients with a proven ulcer or in patients with an ulcer history.

Psychosis. The use of ACTH or cortisone is not recommended for patients who are psychotic or who become psychotic under hormonal therapy.

Hypertension. This is a relative contraindication and if cortisone or ACTH are employed sodium restriction and close clinical observation are necessary.

Cushing's Syndrome. The reason here is apparent.

Osteoporosis. In patients with severe osteoporosis the use of ACTH or cortisone aggravates the condition, and if their use is not mandatory they should not be employed.

Adrenogenital Syndrome. It is apparent that ACTH is contraindicated in this condition, but cortisone, by suppressing the for-

mation of endogenous ACTH, is of major value.

Renal Disease. When renal disease is present, especially with associated azotemia, the use of ACTH or cortisone is contraindicated. As mentioned previously, however, the hormones may be of value in therapy of the nephrotic syndrome.

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STAFF CONFERENCE

John Gaston Hospital, Memphis, Tenn.

Adrenalectomy in the Management of Metastatic Carcinoma*

DR. IRIS PEARCE: The patient, a white female 31 years of age, was admitted to the Methodist Hospital on January 24, 1952, because of a mass in the right breast that had been noted first prior to the delivery of a normal pregnancy October 17, 1949. The hard nodular mass involved approximately one-half of the right breast, with no fixation to the chest wall or skin, but with palpable nodes in the right axilla. On January 25, 1952, a radical mastectomy was done on the right. The pathologic specimen showed carcinoma simplex, metastatic to 7 of 10 lymph nodes. Postoperation roentgen irradiation to the axilla was given.

On July 8, 1952, hard nodules in the skin of the right chest wall were noted. They regressed in size with X-ray therapy to the chest. On August 26, 1952, the patient complained of pain in the left sacro-iliac region, left buttock and down the left leg. Radiation castration was done. Additional X-ray treatment was given to the sternum, a skin nodule in the chest wall, and the right humerus because of evidence of metastatic disease in these sites. Between January 30 and July 1, 1953, the patient developed numerous pains over the body, particularly in the chest, but X-ray study revealed no definite evidence of metastases.

In July, 1953, X-ray examination showed multiple metastatic lesions in the pelvis and right femur to which therapy was given. Oreton 100 mg. intramuscularly twice weekly was started. In October, 1953, the patient showed signs of masculinization. X-ray films revealed further progression of metastases with destruction of the second lumbar vertebra and questionable lesions of the neural arch. Skin metastases were present in the right chest wall. Radiation was given to the posterior lumbar area and to the skin nodules.

Throughout the entire course the patient received temporary relief of pain after radiation therapy. Intramuscular testosterone, 50 mg. daily, has been continued.

The patient was admitted to the John Gaston Hospital on March 4, 1954, for evaluation for possible bilateral adrenalectomy. Examination showed several non-tender, firm nodules, 0.5 cm. in diameter, in the scalp. There was a generalized increase in body hair, especially over the face and lower extremities. Speech was slow and the voice was husky. There were medium moist rales throughout the lung fields. Multiple, movable,

very firm, non-tender nodes in the left axilla, about one cm. in diameter, and in the subcutaneous tissue of the abdominal wall were noted. Presence of ascites was equivocal.

Hematocrit was 33 vol. %, white cell count 6,250, metamyelocytes 3%, band forms 2%, polymorphonuclear form 76%, lymphocytes 12%, monocytes 1%, basophils 1%, and eosinophils 5 per cent. Blood NPN was 37 mg. per cent. Serum total protein was 5.4 Gm. with albumin 3.5 and globulin 1.9 Gm. %; alkaline phosphatase 8.1 units; phosphorus 4.3 mg. per cent. Serum sodium was 144 mEq./l., potassium 3.9 mEq./l., chloride 103 mEq./l., calcium 10.3 mg. % and cholesterol 276 mg. Urinary excretion of 17-ketosteroids in 24 hours was 23.3 mg. Radioactive iodine uptake over the thyroid gland was 32.4 per cent. Eosinophils dropped from 110 to 70 per cu. mm. 4 hours after epinephrine. After ACTH, they dropped from 100 to 70 per cu. mm. Vaginal smear showed basal cells, precornified cells, cornified cells, and very little estrogen function.

During hospitalization morphine sulfate every four hours has been necessary to relieve pain.

DR. ALYS LIPSCOMB: This patient was admitted for consideration of bilateral adrenalectomy as palliative therapy for metastatic carcinoma of the breast. Admittedly this is heroic therapy for a malignant process, the outcome of which is inevitable. On the other hand, the tragedy of such an occasion in a 32 year old wife and mother demands heroic measures if the individual patient is to be benefited and if progress is to be made. She has already had benefits of surgery, radiation therapy, radiation castration and androgenic hormone therapy. Yet the osseous metastases are progressing and life is tolerable only because of the relief obtained by narcotics.

Therapy directed toward malignant disease has received considerable emphasis in recent years and rightly so. It is inspiring to review the evolution of therapy of breast cancer as has been necessary in preparation for this discussion today.

Historically, ovarian hormones have been implicated as a sustaining factor in carcinoma of the breast since Beatson in 1896¹ reported regression in 2 cases of carcinoma of the breast after surgical oophorectomy. Later reports substantiated this observation in that 10 to 20 per cent of patients so treated improved appreciably. In more recent years, X-radiation castration has largely replaced the operative procedure in spite of the fact that this technique is a slower and

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less certain method. Castration is now an accepted and commonly employed procedure. The value of sterilization has been attributed to removal of one of the two sites of estrogen formation in the body.

Several facts and observations led to study of ablation of adrenals in patients who had carcinoma of the breast and previous surgical or X-ray castration. These are:

1. The adrenal cortex manufactures androgens and estrogens.

2. After ablation of the gonads adrenal hypertrophy and hyperfunction occurs.

3. In certain experimental animals (mice), after removal of the gonads, adrenal hypertrophy has been demonstrated first, followed by the development of adrenal cortical tumors and at times by the development of mammary cancers.

4. Following orchiectomy in the human male, androgen excretion in the urine as measured by 17-ketosteroid output increases. Removal of both adrenals results in diminution of these values to traces only.

5. After removal of the ovaries in the human body, significant to large urinary excretion of estrogens still occurs. Again removal of both adrenals results in disappearance of those substances from the urine.

It is logical, following this precise, step-wise reasoning, that patients with carcinoma of the breast be subjected to surgical oophrectomy and or bilateral adrenalectomy or in a few instances to both procedures simultaneously.

Pioneers in this work have been Dr. Charles Huggins and his colleagues at the University of Chicago and Dr. O. H. Pearson and his co-workers at the Sloan Kettering Institute in New York.

Relatively safe application of this heroic measure was made possible by ready availability of the 11-oxygenated adrenal steroids, especially cortisone and hydrocortisone. Using these steroids, pre- and post-operatively, the Chicago group have reported a series of 70 bilateral adrenalectomies without postoperative adrenal insufficiency.

Since these patients are often malnourished and weak, liberal quantities of blood were administered preoperatively. Ethyl-ene-oxygen anesthesia with pentothal in-

duction is preferred. A program of hormonal substitution which they have elected as optimal² is as follows:

Substitution Therapy for Total Adrenalectomy

O MINUS 1 DAY	
Cortisone acetate	50 mg. 6 a.m., 12 m. 6 p.m., 12 p.m.
Desoxycorticosterone acetate	5 mg. 6 a.m.
Sodium chloride	5 gm. 6 p.m.
O DAY (DAY OF OPERATION)	
Cortisone acetate	150 mg. 7 a.m.
Desoxycorticosterone acetate	5 mg. 7 a.m.
Operation	— 8 a.m.
Cortisone acetate	50 mg. Every 4 hrs.
O PLUS 1 DAY	
Cortisone acetate	50 mg. Every 6 hrs.
Desoxycorticosterone acetate	5 mg. 1 injection
Sodium chloride	3 gm. by mouth
O PLUS 2 DAYS	
Cortisone acetate	50 mg. Every 12 hrs.
Desoxycorticosterone acetate	0-3 gm. As needed
Sodium chloride	3 gm.

SUBSEQUENT DAYS

The dosage of steroids is gradually reduced until the sustaining dose of cortisone acetate (25 to 50 mg. daily) is reached about one week after operation; desoxycorticosterone is not required for maintenance therapy.

In addition, at the time of adrenalectomy, 3 compressed pellets of desoxycorticosterone acetate weighing 225 mg. are implanted subcutaneously. During operation 500 cc. of normal saline followed by 1 pint of blood or plasma is administered. Other transfusions are given as indicated by blood loss. Post-operatively, 500 cc. of 5 per cent glucose in saline and 1,000 to 1,500 cc. of 5 per cent glucose in water are given over the next 12 to 18 hours. Oral fluids are begun as soon as tolerated. Insertion of an indwelling catheter facilitates accurate observation of urinary output and reflects the status of renal blood flow. Adequate output is considered to be 20 to 30 cc. per hour.

Penicillin is used as postoperative prophylaxis against infection. Aspirin is used as necessary for fever. Hypotension is managed by a vasopressor substance like norepinephrine in a concentration of 10 micrograms per ml. of saline intravenously at a rate to maintain a satisfactory blood pres-

sure (more than 100 mm. systolic). If pulmonary or pleural metastases are present, nasal oxygen may be required. Early ambulation (24-48 hours) is practiced.

Subsequent maintenance of these patients is the same as for any chronic adrenal insufficiency and, in Huggins' hands, usually amounts to cortisone 37.5 to 50 mg. per day and 1 to 3 Gm. of sodium chloride per day. A rare patient may require desoxycorticosterone acetate to prevent orthostatic hypotension.

Patients handled in this manner by these two groups alone now number more than a hundred. Significant objective remissions are obtained in 30 to 40 per cent of patients with metastatic carcinoma of the breast treated with bilateral adrenalectomy. This is reminiscent of favorable results obtained with sympathectomy for hypertension and, in our present consideration, as in that instance, points up the need of the method of choice of patients to be subjected to extensive surgery.

Huggins and Dao³ believe that the histologic appearance of the tumor is of aid in predicting the response to adrenalectomy. Fairly well differentiated malignancies such as adenocarcinoma and papillary carcinoma demonstrated a higher rate of improvement after adrenalectomy than did the undifferentiated types. In fact, the latter in general did not respond.

The Sloan Kettering group⁴ analyzed their cases in this regard in retrospect and commented on the difficulty of exact classification of the lesions into one pigeon-hole because of multiplicity of structural variation in a single tumor. However, they were able to report a 75 per cent agreement between histologic diagnosis and response to adrenalectomy. But they also pointed out that there were cases of well differentiated tumors which did not respond and anaplastic ones which did respond.

These same investigators studied 3 menopausal patients in regard to calcium metabolism⁴ in an effort to determine another objective factor which might help predict response to adrenal surgery. All of these women had the same type of cancer, namely, infiltrating duct carcinoma grade II or III and all had osseous metastases. They

assumed that the growth of one gram of tumor tissue destroys one gram of bone and since one gram of bone contains 100 mg. of calcium this much calcium should be excreted when one gram of bone is involved in an osteolytic process. The patient is kept on a low calcium diet (omitting milk and milk products) and the calcium excreted in the urine, blood calcium and alkaline serum phosphatase determinations are done.

If osteolysis is proceeding rapidly, hypercalcemia and hypercaluria and decreased alkaline serum phosphatase results. Hypercalcemia will not be apparent, however, unless calcium excretion in the urine is 500 mg. per day more. Three of these patients demonstrated during a menstrual cycle a progressively rising calcium excretion in the urine which fell promptly with the onset of the menstrual period. After surgical oophorectomy, urinary calcium excretion decreased to normal levels the first week which they interpreted as indicating the prompt cessation of osteolysis. Bone pain, likewise, diminished concomitantly. Parenteral administration of estrogen resulted in prompt return of hypercaluria and hypercalcemia and diminution in alkaline serum phosphatase as well as return of symptoms. Withdrawal of estrogen resulted in the prompt subsidence of hypercaluria and hypercalcemia and gradual diminution in bone pain. This group of patients appear to have an estrogen-dependent tumor. The other 3 patients responded differently to castration and estrogen administration in that, during the menstrual cycle, there were no fluctuations in the calcium metabolism. Following surgical castration there were no fluctuations in calcium metabolism and no clinical improvement. Following administration of estrogen, calcium excretion was depressed but not to normal levels. On the basis of these observations, these latter 3 patients are thought to have a non-estrogen dependent tumor. Since adrenalectomy results in removal of the second site of estrogen formation in the body, patients with estrogen dependent tumors should be expected to respond gratifyingly to adrenalectomy whereas patients with non-estrogen dependent tumors should be expected to derive little if any benefit from the procedure.

This information correlates well with Pearson's clinical observation¹ that patients who did not benefit from surgical oophorectomy did not respond to adrenalectomy.

I am sure at this point that some of the medical students are wondering, and if they are not they should be, why hypophysectomy is not used to bring about a simultaneous gonadectomy and adrenalectomy rather than subjecting patients to two such operative procedures as we have been discussing here today. The concept that there is nothing or practically nothing new under the sun applies here as it does elsewhere. This procedure, indeed, has been suggested in therapy of far advanced carcinoma with metastases. However, only a handful of patients have been so treated to date and the procedure must be subjected to further clinical trial before it is adequately evaluated.

In regard to the patient under discussion today, it appears that she may have a non-estrogen dependent tumor. Factors which suggest this are, (1) lack of, or minimal response to castration. One must be cautious in this interpretation, however, since sterilization was accomplished by X-radiation and may be incomplete. We do not have estrogen determinations in this patient because they are unavailable in this institution. However, the vaginal smear is reported as showing very little estrogen effect. (2) Lack of or equivocal response to androgen therapy. She may not have received enough; on the other hand, masculinization occurred suggesting that the dosage was adequate. It has not been substantiated, either, that only estrogen dependent tumors respond to androgen therapy.

I hesitate to suggest that adrenalectomy be omitted on the basis of these observations. I also hesitate to suggest that calcium balance studies be instituted and the patient be subjected to surgical oophorectomy with the purpose of trying to decide whether this is a non-estrogen dependent tumor or not. Unfortunately in this institution we have had no experience with this procedure and must be guided by the experience of others as reported in the literature in attempting to decide how to handle individual patients. The highly undifferentiated

nature of the tumor is the only relatively positive and fairly well documented point on which we have to go and on this basis alone we would not expect a favorable result from adrenalectomy.

I would like to hear more discussion on the decision as to whether this particular patient should be subjected to bilateral adrenalectomy. I believe that all the evidence we have suggests that little or no benefit could be predicted in her case. Also, in view of Pearson's observation¹ that 3 patients with non-estrogen dependent tumors have responded favorably to the administration of 200 to 300 mg. of cortisone daily over a 2 month period suggests that this would be the optimal, middle-of-the-road approach for treatment in this particular case. This patient, after all, is "living on borrowed time." She has been extremely fortunate to have lived 2 years with the extensive disease which was demonstrable at the time surgery was performed.

DR. PEARCE: The discussion will be continued by Dr. Livermore of the Department of Surgery.

DR. GEORGE LIVERMORE: In this discussion, I should like to pose two questions, not so much with the idea of answering them as with the idea of provoking discussion. First, should we operate on this patient? And secondly, should we embark on a program of adrenalectomy in advanced cancer?

Adrenalectomy for such cases was first performed by Huggins and his associates in 1945. Having noted that patients with carcinoma of the prostate were improved by castration and estrogen therapy, only to escape from control at a later date, they postulated that the adrenals began to produce androgens at an increased rate. Indeed, in some cases a rise in 17-ketosteroid excretion in the urine can be demonstrated, but this correlation with escape from hormonal control is not consistently present. In their first cases, the patients all succumbed to adrenal insufficiency because of the lack of adequate replacement therapy at that time. Since the advent of cortisone several series have shown that prostatic cancer is affected by adrenalectomy.

The case for adrenalectomy in breast can-

cer is more difficult to explain. It has been demonstrated that this disease is often arrested by castration or by treatment with either estrogens or androgens, but again, as with prostatic cancer, escape from control occurs. In the patient who has been castrated or is post-menopausal, such escape is thought to occur because of some alteration in the hormone pattern of the adrenals which produce, either directly or as metabolic by-products, estrogens and androgens as well as their own particular hormones.

What then are the results of bilateral adrenalectomy in advanced cancers? The most striking result has been the control of pain which has occurred in about half the cases. Along with this, there is a general subjective improvement in strength, nutrition, and sense of well-being. In virtually all cases, however, this lasts but a few months during which time the disease progresses relentlessly. Even with eventual death from the disease, however, the recurring symptoms do not generally reach the severity manifested before adrenalectomy. One unexplained item has been the subjective improvement in the face of increasing tumors. This has been attributed to the cortisone given to these patients as maintenance therapy postoperatively, but it is the opinion of the group working at Memorial Hospital that the improvement noted after adrenalectomy is greater than that observed in patients put on cortisone without having surgery. Indeed, two patients received cortisone alone with only partial relief of their symptoms. They were later submitted to adrenalectomy with complete relief.

Objective improvement is hard to evaluate and occurs in a much smaller percentage of cases. This percentage was so small in the cases of prostatic cancer in the Memorial Hospital series that bilateral adrenalectomy was deemed not a practical therapeutic procedure at the present time. The patients with breast cancers on the whole fared much better. Nine out of 12 showed subjective improvement and this was 100 per cent of those surviving 3 months. Five of the 12 showed objective regression, one patient having a major remission for 9 months. This was the only patient, however, who had survived over 1 year, 7 hav-

ing already died from their disease in less than 8 months, and 3 of the remaining 4 having survived less than 3 months. Huggins reports remission in 20 of 43 females followed long enough to evaluate. Of 14 patients observed from 1 to 2 years, 6 are dead of their disease, 1 alive but unimproved and 7 are still in remission.

The case for adrenalectomy in advanced carcinoma of the breast would be greatly strengthened if we had some method of selecting those cases which would respond favorably. No accurate method exists but various workers offer some clues. The Memorial Hospital group believes that cases responding favorably to castration—and they performed oophorectomies in all their cases, even those felt to be post-menopausal—will respond well to adrenalectomy. In a similar vein, Huggins believes that a high titer of estrogenic substances in the urine in the absence of gonadal function indicates a high degree of adrenal activity and, hence, a probable remission following adrenalectomy. Huggins also believes that the microscopic appearance of the tumor is helpful in predicting the outcome. Mature cell types and the formation of acini as in papillary and adenocarcinomas indicate hormone dependent growths with a favorable outlook. Sixteen of 19 papillary and adenocarcinomas responded favorably. He and Dao state that duct carcinomas rarely, and undifferentiated carcinomas never do so. Of 8 duct carcinomas, 1 had a good result and none occurred in 16 undifferentiated carcinomas.

I believe we can at this point attempt to answer the questions posed at the outset. From the figures already cited, it becomes obvious that no matter how we may feel about the case at hand, the performance of a single isolated adrenalectomy will do little for us and may do even less for the patient. It is highly doubtful whether the rather improbable gain of a few months of comfort is worth all the surgery and postoperative care the patient would require.

On the other hand, if we want to evaluate this procedure and attempt to evolve our own criteria for its use, I believe we should perform it on an unselected group of advanced breast cancers, probably on alter-

nate cases which have escaped from hormonal control, the others receiving cortisone alone without adrenalectomy. Unless the departments involved wish to embark energetically on such a program, I hardly believe the published results warrant the use of adrenalectomy in any given case.

Just a very few words about surgical technic. The classical approach to the adrenal gland has been the postero-lateral lumbar incision similar to that used for a nephrectomy. The twelfth rib may or may not be resected, but exposure is improved by doing so. Most authors reporting on bilateral adrenalectomies have favored this approach. Both sides are done at one sitting. The patient may be placed prone and the incisions made simultaneously by two teams; however, exposure is compromised by this position. More often, the operations are performed with the patient in the lateral decubitus. At the conclusion on the first side, the patient is turned and redraped. Huggins may combine oophorectomy through a lower midline incision with right adrenalectomy after turning the patient. He then brings the patient back to surgery in two weeks for the left adrenalectomy. More recently he has performed all 3 steps in one stage.

The trans-abdominal approach makes ex-

posure considerably more difficult, but allows both adrenals to be removed through a single transverse or vertical upper abdominal incision. Obesity considerably adds to the difficulty of exposure and, by and large, the lumbar seems preferable.

The trans-thoracic approach gives excellent exposure and is often the route of choice in large tumors. It is not suitable, however, for bilateral procedures.

Since the advent of cortisone, the operative and immediate postoperative management of adrenalectomized patients has been greatly simplified. The details of this have been outlined by Dr. Lipscomb.

DR. PIERCE: This concludes our discussion for today.

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Grande Multiparity. T. Barnes. Edinburgh M. J. 60:28, 1953.

Almost a century ago Matthews Duncan gave statistical evidence for the first time of the increasing hazard associated with parturition in the woman of high parity. The risk is now known to extend to the fetus and the newly-born child of the highly parous mother as well.

This report concerns itself with 306 women undergoing their eighth or subsequent confinement of a viable child. The records of these patients have been studied in an attempt to find out the clinical causes of the risk to the mother and fetus. The cases were unselected and were derived from two different maternity units,—The Radcliffe Infirmary at Oxford and the Newcastle General Hospital. At Oxford there were three maternal deaths and a combined fetal loss of 31 babies, or 18 per cent. At Newcastle, where the experience is largely of women who apart from their high parity were considered normal in other respects, there was one maternal death and a combined fetal loss of 12 babies, or 9 per cent.

A great number of the stillbirths and neonatal losses, as indeed the maternal deaths also, happened in association with antepartum hemorrhage. At both hospitals 50% of the mothers admitted with accidental hemorrhage lost their babies and, in those cases with antepartum hemorrhage due to other causes, there was a 13% and 30% fetal loss at the two hospitals. In addition to this all the four maternal deaths in this series were associated with antepartum hemorrhage, two of the women dying as a direct result of the bleeding. Throughout this study antepartum bleeding, especially of the accidental type, has clearly constituted the gravest single menace to maternal and fetal life.

Deaths from uremia (predisposed to by the increasing frequency of cardiorenal disorders in these age groups), and deaths from heart disease and embolism were also seen to increase with parity.

Postpartum hemorrhage of more than 20 ounces of blood occurred after 8% of the deliveries in this series. There were 25 cases, seven of these requiring blood transfusion and four manual removal of the placenta. No maternal death nor loss of fetal life was associated with these cases. It was observed how often a past obstetric history of antepartum bleeding repeated itself in the pregnancy under consideration. Seventeen patients gave a past history of antepartum hemor-

rhage, 13 of these again presenting with this complication. Whereas in 15 patients who had had a postpartum hemorrhage following a previous delivery, in only two was this repeated.

At Oxford there were 20 cases of toxemia of pregnancy (11.6%) which occurred without associated accidental hemorrhage. These cases resulted in two stillbirths and two neonatal deaths. At Newcastle there were 10 such cases and one stillbirth resulted. If those patients are included in whom toxemia was complicated by accidental hemorrhage, there were 30 in the Oxford series, two of whom were eclamptics, a further two cases of fulminating toxemia necessitating immediate termination by cesarean section, and another two cases which were followed by anuria. These 30 cases resulted in two maternal deaths, three neonatal deaths and seven stillbirths. The evidence here leaves little doubt that toxemia with accidental hemorrhage is particularly severe condition when it occurs among women of high parity, and constitutes a potent cause of maternal and fetal death.

There were 19 women diagnosed as essential hypertensives in the series, four of whom developed a superimposed toxemia of pregnancy and only one stillbirth resulted. No case was complicated by accidental hemorrhage.

Among 26 cases of malpresentation there was a combined fetal loss of eight babies. Twelve of these were transverse presentations which commonly occur at term in women of high parity.

In the combined series there were four cases of contracted pelvis with cephalopelvic disproportion. In the combined series the following conditions also occurred: uterine inertia of longer than 24 hours' duration, five cases; ruptured uterus, one case. The association between high parity and prolonged inert labor has generally been made although in this series it occurred infrequently.

In the 306 deliveries there were 19 cesarean sections and two cesarean hysterectomies performed in addition to eight forceps deliveries and five internal versions. These high rates of operative interference serve to emphasize the abnormal character of labor among grande multiparae.

The high incidence of severe anemia was noteworthy. Using the necessity for blood transfusion during the course of pregnancy as the criterion, there were 21 such cases among the series.

(Abstracted by Milton Smith Lewis, M.D., Nashville.)

Our New President



JOHN R. THOMPSON, JR., M.D.
Jackson

Dr. Thompson: May His Tribe Increase

"Now he that planteth and he that watereth are one,
And every man shall receive his own reward according to his own labor."

John Robert Thompson, Jr., planted deep and he watered well, not because he wants any glory himself, but because, like Abou Ben Adhem, he loves his fellow man.

Long before Dr. Jack Thompson helped to formulate the Public Service (Tennessee Ten) Program for the Tennessee State Medical Association, he was giving part of himself for public service while engaging in a busy private practice.

Dr. Jack Thompson was one of the charter members of the Public Health Council of the State of Tennessee. He still is, and will be so long as the politicians recognize a man for his value.

In 1951 the Jackson Exchange Club, citing "Dr. Jack" as "Man of the Year," said he successfully fought for the Jackson-Madison County General Hospital; was secretary of the Building Committee and medical advisor to the Hospital Trustees; was Committeeman on Emergency Medical Service of the TSMA; was Chairman of the Board of the Jackson First Methodist Church; was Building Fund Chairman for the Church; was moving spirit in construction of Rothrock Athletic Stadium; was Treasurer of the Hundred (High School Athletic) Club; was charter member of the Jackson Housing Authority; was "soldier of extreme worth in the service of the country in two major wars," the latter including Chief of Administration Branch, Hospital and Domestic Operations, Office of the Surgeon General, for which he was awarded the Commendation Ribbon; helped to reorganize the Tennessee National Guard, receiving TNG Commendation Ribbon; transferred to USAR as Colonel, Medical Corps.

That is Dr. Thompson, the full-time citizen, at age 54.

This new President of the TSMA is the son of a revered Jackson couple, John R. Thompson (druggist) and Mrs. Thompson. In elementary and high school in Jackson he played basketball, was trackman, became class president. At Vanderbilt he was an ATO and Alpha Kappa Kappa in his "easier" years, then settled down to medicine; interned at Vanderbilt and entered general practice in Jackson in 1925. Two years later he leaned toward his life interest—radiology. He is now Chief of Radiology at Jackson-Madison County General Hospital, and on the radiological staff of the Jackson Clinic.

Our new President is a citizen whose activities and aims cut across all lines. Although Chairman of a Methodist Board, he was chairman of a successful drive for funds to build a gym for Baptist Union University. He was also Chairman of the Jackson phase of a million dollar campaign for Methodist Lambuth College.

As full-time physician and full-time citizen, Dr. Thompson has little time for hobbies. However, he will drive 142 miles to Nashville, without prompting, to see a football, basketball or baseball game. He likes motorboating. Andrew Jackson and Robert E. Lee provide his reading material. His medical hero is John Owsley Manier. He thinks Dr. Manier feels as a man should about his medical society and he KNOWS Dr. Manier has served as a man should.

Dr. Thompson won't tell you this, but it hurts him that the subject of organized medicine is bandied about in the periodical print. He knows that the profession is letting itself be damaged by the very small percentage of bad actors and he is determined to do something about it. For further details concerning that ambition, read his inaugural address in this issue.

Dr. Thompson did not become the man he is all by himself. On June 1, 1927, he married Lena Wilde of Jackson. She has and has always had one hobby—her husband and their daughter, Jacqueline, graduating in June from Vanderbilt University with a major in Psychology. An accomplished pianist, leading churchwoman, former teacher, graduate of Vanderbilt (following Randolph-Macon) with a B.A. in Political Science, gracious Mrs. Thompson is the kind of a wife a doctor ought to choose.

I breakfasted with the Thompsons recently. Mrs. Thompson asked if I would mind if she read a morning devotional. Did I mind? I had not felt so secure in a long time. It was a refreshing and heartwarming experience. I would like to go to that house again.

To medicine, to mankind, and to me—Dr. Jack Thompson is the "Rock of Gibraltar."
—Ed L. Bridges.

The President's Page

A PLEDGE TO MY SUCCESSOR—AN ACCOUNT OF MY STEWARDSHIP



DR. PATTERSON

It is with many mixed feelings that I write my last page. Previous pages presented their own problems. First, what would I write about? Then, how would I gather information when at last a subject presented itself? When would I find time to write it before the dead-line? During the previous months such questions as these were ever before me. Now, it is different. I must give an account of what I have done as your President. The source material looks so scanty; yet there are many things I would like to say,—things that well up but are too intangible for expression.

It will be with a feeling of relief that I lay down my burdens and free myself from the ever present fear that I might not say nor do the right thing. On the other hand, there is an element of sadness and regret mixed with this fear when I compare what I have done with the good intentions I had this time last year. To off-set any such negative thinking, however, a positive sense of pride and satisfaction comes from the opportunity to have observed the progress our Association has made. Progress due to the loyal, faithful work done by our active committees, our Executive Secretary, our Public Service Director, our Field Directors, and our headquarters office force. Then too, there is a feeling of confidence as I turn my duties over to my successor, Dr. Thompson.

There were also many happy experiences connected with being your President. It was my pleasure to represent our Association at two State Medical Meetings. First I attended a portion of the annual session of the Medical Association of Georgia at Savannah. They had an excellent program, and it was a source of much inspiration. Next, I had the privilege of attending the

annual session of the Kentucky State Medical Association, at Louisville. They also had an excellent program. It was striking how similar in many ways the activities of these Associations resemble our own; but the most impressive feature of both these meetings was the atmosphere of seriousness of purpose and the enthusiasm that a visitor sensed.

It was also my honor to represent our Association at the annual meeting of the Tennessee Bar Association. This was particularly profitable and afforded an insight into some medico-legal problems which our Association must study carefully. Meeting and talking with many of the members of the Bar threw new light on the need of closer liaison between the legal and medical professions. Since then Liaison Committees have been appointed in our respective Associations in order that harmonious relations, better co-operation and more understanding can exist between our professions. It is to be hoped that these committees can effect the desired results.

It was also a source of extreme pleasure to be an invited speaker, as your President. I addressed the Woman's Auxiliary of Nashville. This was an impressive meeting, and it was very enlightening and encouraging to observe the seriousness of these ladies and to survey the scope of their excellent work. A similar opportunity was afforded me to address our local Rotary Club on present trends in medicine and what organized medicine is doing about them. This was a most rewarding experience to observe the intense interest these leading citizens are showing in problems which we too often think belong solely to us, when actually they are everybody's problems. On another occasion, a chapel address on medical education at one of our preparatory schools revealed much of the same interest. Such experiences give one the feeling that our Public Service efforts are being met with success. A quarter hour on the radio discussing President Eisenhower's message to Congress on the Health of the Nation

may not have been such a success; the microphone gave no response at all.

As to the actual work, my only achievements were attending meetings, learning things, and having the great satisfaction that is derived from observing how diligent and serious our committees are in working for the good of this Association. I attended two regional meetings in Atlanta, the Charleston, West Virginia, Conference, three meetings in Knoxville of the Building Commission of the Tennessee Memorial

Research Center and Hospital, and several meetings and conferences in Nashville. At the insistence of Mr. Ed Bridges, I managed to beat the dead-line for the President's Page.

Again I thank you for the privilege and honor of having been your President, and I pledge my loyal support to my worthy successor, Dr. Jack Thompson.

A. M. Patterson.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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APRIL, 1954

EDITORIAL

PREVENTION OF INFECTIOUS HEPATITIS BY GAMMA GLOBULIN

It has been known for several years that gamma globulin may be used as a prophylactic measure in the control of infectious hepatitis in susceptible contacts. A paper from the Maine Department of Health and Welfare corroborates this fact by studies carried out during 1952 and 1953.¹

During a fifteen month period 671 cases of infectious hepatitis were reported in contrast to a total of 17 in the year 1951. Of these 414 cases were in persons under the age of 25 years. School-age children showed the highest rate of incidence since 159 of the 269 primary cases and 59 of 119 secondary cases, in 235 families studied, were of this age group. The epidemic reached its peak, after a gradual increase, eleven months following its onset. It seems quite clear that the decline of the epidemic was related to the use of gamma globulin. In classrooms where cases were appearing

the use of globulin in the remaining susceptible children was followed by no further cases.

The effects of gamma globulin on the incidence of secondary cases were studied in 235 families, it being necessary to follow the members of the family thirty days after the last case appeared. Globulin was given to one or more contacts in 67 of the 235 households. There were 976 household contacts in the 235 families; 268 or 27.6 per cent were given globulin. From the 235 households there were reported 388 cases of hepatitis. Of these 269 were initial cases or cases which appeared simultaneously, and 119 were secondary cases, which came on in from ten days to six months after the last case in the household. Any cases becoming ill in less than ten days were considered to represent infection from the same source and coincident with the primary case.

Of the 119 secondary cases only 3 were in contacts who had received gamma globulin early enough to have been potentially preventive. The attack rate was 16.8 per cent for the noninoculated contacts and 1.1 per cent for inoculated contacts.

Since it has been recognized that secondary attack rates increase with family size this factor was studied in the 235 families. The greatest number of susceptibles was in families having 3 to 5 susceptible members. The greatest number of households having secondary cases were those which had 3 to 6 susceptible persons, though the highest rate 38.1 per cent occurred in families with 7 susceptible members.

A control group was represented by 616 susceptible members of 151 families who received no globulin and 17 families having 86 susceptible members who received their globulin after secondary cases had appeared. The secondary attack rate in these unprotected 702 susceptible contacts, of whom 111 developed hepatitis, was 15.8 per cent.

This study then confirms others in the demonstration of the efficacy of gamma globulin as a prophylactic measure. "The secondary attack rate in families receiving no inoculation was 15.2 per cent. That in families protected by globulin was 0.6 per cent." "Even with crowding in the home,

¹Ashley, Alta: Gamma Globulin: Effect on Secondary Attack rates in Infectious Hepatitis, New England J. Med. 250:412, 1954.

as in large families having 7 susceptible contacts the rate was six times higher in unprotected families."

In another paper by a Boston group² similar results were obtained. They gave globulin to *alternate* persons in 40 households in which a sporadic case of hepatitis had occurred. Among the exposed 38 adults and 57 children, protected by globulin, only 1 case of hepatitis developed and that only six days after injection. In the control unprotected group there were 2 cases of secondary infection among 55 adults and 11 cases among 40 children,—4 and 27 per cent respectively.

In this study they demonstrated that 0.1 cc. per pound of body weight was as effective as that of 0.1 cc. in prevention of the spread of hepatitis in family groups.

Gamma globulin thus is shown to be an effective prophylactic agent against the spread of infectious hepatitis in susceptible exposed persons.

R. H. K.

²Yi-Yung, D., Lonsway, M., and Gellis, S. S.: Gamma Globulin in the Prevention of Infectious Hepatitis. Studies on the Use of Small Doses in Family Outbreaks, *New England J. Med.* 250:417, 1954.



ABUSES IN BILIARY SURGERY

Over two hundred years have passed since the first deliberately planned cholecystectomy was performed by Jean Louis Petit in 1743. It was not until 1882, however, that the first cholecystectomy was performed on a human by Langenbuck, and three years later when Ohage performed the first cholecystectomy in the United States.

What has been our progress since then? No doubt the number of common ducts ligated or the number that have developed strictures as a result of operative trauma would add up to staggering figures. This was to be expected in the earlier years as experience was accumulating. But what is disturbing is that even in 1954, when the best trained surgeons of all time are available, these unfortunate accidents still occur. The statistics of the larger medical centers show that the greater percentage of common duct strictures secondary to cholecys-

tectomy appear in patients operated upon by the "occasional" surgeon.

Those who have had approved surgical training realize only too well the pitfalls that are ever present when major surgery of any type is undertaken, and nowhere are the dangers greater than in biliary surgery.

It has often been said, and aptly so, that a surgeon should never undertake to open an abdomen unless he is capable, prepared, and equipped to care for any surgical condition that may present itself. Of course there are always exceptions to a rule and especially so in surgery. The exceptional risks should be only the cases in which a competent surgeon is unavailable and the operation is deemed a lifesaving measure.

Biliary surgery may be elective or emergency in type. Often one is surprised to find a fairly acute phase when the usual "chronic" type gallbladder is expected. These are the cases when the inexperienced and occasionally even the more experienced surgeon does a cholecystostomy and feels lucky to get off so lightly. The patient, however, still has a cholecystectomy facing him a few months later. Should the patient be subjected to such a penalty?

When a surgeon decides he has reached the stage in skill and judgment to undertake gallbladder surgery, he should ask himself a few questions. Some of these might be as follows:

(1) Am I capable of doing a thorough choledochostomy?

(2) Am I capable of doing a safe duodenotomy?

(3) Am I capable of controlling the hemorrhage from a portal vein or cystic artery?

(4) Am I familiar enough with the normal arterial supply of the gallbladder to recognize the abnormal?

(5) Am I capable of differentiating the other types of pathology encountered in this region and skilled enough to surgically evaluate them?

These are only a few of the problems one deals with in only one organ of the biliary tract.

If every surgeon would conscientiously and truthfully answer these questions before undertaking surgery of this type, then the morbidity, mortality, and complications

of biliary surgery would be reduced to a minimum,—provided he followed the dictates of his conscience.

Unfortunately it is still true that today, when capable surgeons abound in all cities and in many smaller towns throughout the United States, a poorly trained or untrained surgeon or physician will undertake operations beyond his scope. Most hospitals in the larger cities of the country have adopted a system whereby surgeons are rated according to ability and training, and it is probable that within a few years such a system will be universal in the cities.

Most communities now have very fine hospitals, some built through the Hill-Burton Act and others through local funds. These hospitals as a rule are well equipped and staffed and have the facilities to care for most types of surgery. Many of these hospitals have attracted well trained surgeons and men in other fields as well. Despite these facilities and despite the availability of trained surgeons, much of specialized care, and particularly surgical care, is often done by men with very limited training. The average citizen unfortunately does not know that training is a prerequisite to good surgery and through confidence and faith does not question his doctor's ability.

A recent article by Myers* deals very aptly with the subject of "Who Should Do Surgery?" He offers a system of classification that is as near to the perfect solution as one could devise. We all know that previous attempts at classifying surgery as minor, intermediate, and major is merely adding another coat of paint to an old house. Surgery doesn't come like pajamas in three sizes, as Dr. Myers points out.

Should our medical associations take steps to control surgery before allowing hospitals to become accredited or approved? Is it proper to preach smugly to Mr. Patient about what wonderful strides medical science has made in the last twenty years and at the same time condone doctors without training to undertake operations without any restrictions?

The day of acquiring surgical training through trial and error is past. The time

has come when the layman should be informed that medical schools and internships do not graduate surgeons but merely give him the tools to attain such a goal. Only through years of approved surgical training can proficiency in the field of major surgery be attained.

BYRON O. GARNER, M.D.

DEATHS

Dr. Ira O. Park, Memphis, died suddenly February 19, 1954, in a Memphis hospital after suffering a heart attack earlier at his home. He had suffered a previous attack but had continued in active practice until two weeks prior to his death. Aged 63.

★

Dr. James E. Ingram, Parsons, died February 21, 1954. Aged 66.

★

Dr. David R. Neil, Nashville, died March 1, 1954. Active in local, state and national medical organizations, Dr. Neil also served as professor of internal medicine at Meharry Medical School for 36 years. Aged 83.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Consolidated Medical Assembly

Fifty-six physicians from the fourteen counties comprising the Assembly attended the regular monthly dinner meeting on March 2, 1954, at the New Southern Hotel in Jackson.

Dr. John Pierce, program chairman, presented two Nashville physicians whose lectures constituted the scientific program.

Dr. Lawrence Grossman discussed the "Medical Aspects of Peripheral Vascular Disease," and Dr. James A. Kirtley read a paper on the "Surgical Aspects of Peripheral Vascular Disease." Dr. G. B. Wyatt discussed Dr. Grossman's paper, and Dr. G. D. Dodson discussed Dr. Kirtley's paper.

Two new members were added—Dr. Allen

*Bull. Am. Coll. Surgeons, April, 1954.

Williams of the Jackson Clinic and Dr. C. N. Hickman of Bells.

Montgomery County Medical Society

The Society was host to a large and representative group of representatives of the American Red Cross from the Atlanta, Nashville and Clarksville offices. The Red Cross representatives, on invitation of the Medical Society, discussed the problems of an adequate supply of blood and blood derivatives for the Clarksville Hospital. With the opening of the new Memorial Hospital, a still greater shortage was in prospect. The meeting resulted in a pledge from Red Cross officials to do "everything humanly possible" to meet the blood needs of Montgomery County.

Robertson County Medical Society

The Society held its regular monthly meeting on March 15 at the Springfield Hospital with practically a full membership attendance. Dr. Henry Carrol Smith, Nashville, was the guest speaker.

Memphis and Shelby County Medical Society

At its meeting on February 2 the program sponsored by the Memphis Heart Association was presented by members of the staff of Kennedy Hospital as follows: "Newer Hypotensive Drugs" by Dr. G. I. Plitman, "Toxic Reactions to Apresoline, Hexamethonium and Veriloid," by F. H. Knox, Jr., "Electrocardiogram in Diagnosis of Electrolyte Imbalance" by Dr. B. R. Gendel and "Hyperthyroidism and Heart Disease in the Elderly Patient: A Case Report" by Dr. A. M. Lefkovits.

Knoxville Academy of Medicine

The scientific program for the March 16 meeting was a paper by Dr. John Dougherty on "Ambulatory Management of Prostatic Infections" and a case report by Doctors Southworth and Dabbs.

Nashville Academy of Medicine and Davidson County Medical Society

A dinner meeting was held on March 9 at Thayer V. A. Hospital. The following papers were presented: "A Case of Sprue" by Dr. H. J. Schulman, "Results of Surgical Treatment of Benign Gastric Ulcer" by Dr. R. A. Matuska and "Human Serum Cholesterol as Related to Atherosclerosis" by Dr. T. M. Blake. There was then a demonstration on "Operation on the Bloodless and Unbeating Heart with Circulation Supported by the Pump Oxygenator" by Dr. F. A. Gollen.

Roane County Medical Society

A meeting was held on March 26 at the Oak Ridge Hospital. Dr. John Weeter of the University of Louisville Medical School gave a paper on "Burns and Their Care" which was followed by a film on the subject produced at the Medical School.

MEDICAL NEWS IN TENNESSEE

Director of Maternal and Child Health Services Appointed

Dr. R. H. Hutcheson, State Health Commissioner, recently announced the appointment of Dr. Neil M. Forbes, Jr., of Laurel, Mississippi, as Director of the Health Department maternal and child health services. Dr. Forbes is a graduate of Louisiana State University, and received his M.D. Degree from the University of Tennessee College of Medicine.

Middle Tennessee Tuberculosis Hospital

A dedication was held of the new hospital on February 28. Dr. W. W. Hubbard, Director, has announced the following staff appointments: Dr. Robert McCracken for surgery, Dr. M. D. Ingram for radiology and Dr. John B. Thomison for pathology and the clinical laboratory.

Tennessee State Orthopedic Society

The Society met at Vanderbilt University

Hospital, Nashville, on March 21 under the presidency of Dr. Samuel B. Prevo. The following program was presented:

"Reduction of Supracondylar Elbow Fractures in Children," Dr. J. W. Hillman, Nashville.

"Arthroplasty of the Hip: End Result Study" (Movie), Dr. Paul Spray, Oak Ridge.

"Upper Femoral Prosthesis: End Result After Complications," Dr. Howell Sherrod, Johnson City.

"Diagnostic Problems in Hips of Children," Drs. Don L. Eyler and Thomas F. Parrish, Nashville.

"Synovectomy of the Hip for Tuberculosis," Drs. Samuel B. Prevo and Thomas F. Parrish, Nashville.

"Rush Nail Disappointments," Dr. John R. Glover, Nashville.

"Delayed Union with Intramedullary Nails," Dr. Dana Street, Memphis, and Joe Burd, Nashville.

"Complications for Tetanus (Broken Intramedullary Nail)," Dr. Samuel B. Prevo, Nashville.

"An Unusual Vertebral Lesion," Dr. J. J. Ashby, Nashville.

"Complication of Homogenous Graft Transplantation," Dr. Ben Fowler, Nashville.

"Soft Tissue Lesions of the Extremities (Lantern slides and microscopic sections)," Dr. Beyerly Ray, Memphis.

"Case Presentation," Dr. Merritt Shobe, Kingsport.

"Case Presentation," Dr. John Killeffer, Chattanooga.

"Resection of the Hip for Bilateral Ankylosis," Dr. Joseph Conroy, Nashville.

"A New Method of Correcting and Grafting Scoliosis," Dr. Eugene M. Regen, Nashville.

Surgical Experimental Laboratory. Demonstration of a method of preservation of arterial and bone grafts by lyophilization, Drs. Collins and Foster, Department of Surgery, Vanderbilt University School of Medicine.

Address: "Medical-Legal Aspects of Orthopaedic Surgery Practice," Dr. George Eaton, Associate Professor of Orthopaedic Surgery, The Johns Hopkins Hospital, Baltimore, Maryland.

Institute of Medical Record Library Personnel

A five-day Institute was conducted by the Tennessee Association of Medical Record Librarians under the sponsorship of the Tennessee Hospital Association. It was held at Vanderbilt University from March 22 to 26 under the direction of the Association's president, Jeanette Chamberlain, Record Librarian at Vanderbilt University Hospital. The Institute was attended by 22 members of personnel from Tennessee hospitals.

University of Tennessee College of Medicine

Dr. Sam H. Sanders, Jr., has been named head of the Department of Otolaryngology and Rhinology, succeeding Dr. Charles Blassingame, who asked to be relieved of his administrative duties.

★

Dr. O. W. Hyman, vice-president of the University in charge of the Medical Units and dean of the College of Medicine, has been awarded the 1953 Citizenship Award by the Newspaper Guild of Memphis.

Vanderbilt University School of Medicine

Dr. Emil Novak, former professor of Gynecology at Johns Hopkins, presented the Haggard Lecture on March 19.

★

Dr. E. C. Andrus, Associate Professor of Medicine at Johns Hopkins Hospital and President of the American Heart Association, spoke on "The Therapy of Mitral Stenosis" on March 17.

PERSONAL NEWS

Dr. Preston C. McDow, formerly with the Hixson Hospital, has opened offices for the practice of medicine and surgery at 4029 Dayton Boulevard in Red Bank.

Dr. Charles C. Smeltzer, Knoxville, has been named vice-president of the Mid-South Postgraduate Medical Assembly.

Dr. Swan Burrus, Jr., Jackson, addressed the

Jackson-Madison County Health Council recently on the subject of Maternal Care.

Dr. John M. Jackson, Springfield, has moved his office from the Bell Building to new offices located in the former Dr. Kempf residence at 105 Seventh Avenue.

Dr. Foster Hampton, Chattanooga, addressed the Brainard Kiwanis Club recently on the subject Heart Disease.

Dr. C. M. Creech, Johnson City, addressed the local Lions Club recently discussing Personality Problems in Children.

Dr. D. T. Strickler, Jr., is now associated with **Dr. A. G. Dittes** in the Portland Clinic.

Dr. Jack S. Phelan has been named assistant medical director for Tennessee Operations of the Aluminum Company of America at Alcoa, it was announced recently by Dr. W. N. Dawson, Medical Director of the Alcoa Plant.

Dr. Sam A. Monger, Jr., and **Dr. J. E. Young** were assembly speakers at Sweetwater High School recently. They based their talks on questions submitted by students.

Dr. Thomas B. Yancey, Kingsport, was honored by his Alma Mater, Sewanee, when he was presented a gold alumni pendant for "outstanding service to the University of the South and to Kingsport."

Dr. R. J. Perry, Manlyville, was honored by scores of his fellow citizens on the occasion of his 86th birthday last month. He was cited for his continued devotion to the role of "country doctor and gentleman." He still carries on an active practice.

Dr. J. O. Walker, Franklin, has announced his candidacy for representative from Williamson County to the next General Assembly of Tennessee.

Dr. Arch Y. Smith, Jr., is expected to open his offices for the practice of medicine in Franklin during the month of April.

Dr. Rob H. Kirkpatrick is now practicing in Erwin with offices in the Stadium Building.

Dr. R. H. Hutcheson, State Health Commissioner, spoke to the McDowell Parent-Teacher Association on "Health and Sanitation" recently.

Dr. E. Hugh Luckey, former Jacksonian, has been appointed dean of the medical college of Cornell University.

Dr. David P. McCallie, Chattanooga, was a recent speaker before the Chattanooga Physician's Assistants Association.

Dr. Roy McDonald, Knoxville, was the guest speaker before the Methodist Men's Club in Rogersville last month. His subject was "Cancer."

Dr. Hunter M. Steadman, Henderson, is now taking a postgraduate course in cardiology in New Orleans.

Dr. George E. Murray, formerly of Brooklyn,

has joined the staff of the Oak Ridge Hospital as urologist.

Dr. Malcolm Tipton, Union City, was a recent guest speaker before the local Kiwanis Club.

Dr. Harry Pope, Knoxville, addressed the Knoxville Medical Assistants Association on the subject of Alcoholism recently.

Dr. C. E. Irwin, Knoxville, announces the opening of his new offices in Suite 505, Medical Arts Building, Knoxville.

Dr. John B. Youmans, dean of Vanderbilt University School of Medicine, led a panel discussion on nutrition at the National Conference on Rural Health in Dallas, Texas, March 4 to 6. The meeting was sponsored by the Council on Rural Health of the American Medical Association.

BOOK REVIEW

Respiratory Diseases and Allergy. New Methods of Approach. By Josef S. Smul, M.D. New York Medical Library Co., 1953. Pages 80. Price \$2.75.

The author is an attending physician at the Beth David and the Beth Israel Hospitals of New York City. His interests lie in the field of gastro-enterology and food allergy.

The writer devotes the first thirty-eight pages to what he terms respirallergy. Here he lumps together some twenty-odd diseases of the respiratory tract which he feels "after many years of research" present only various syndromes of the same basic disturbance. In addition to neurosis, hay fever, vasomotor rhinitis and asthma, he includes rhinitis, bronchitis and sinusitis whether acute, recurrent, suppurative, hypertrophic or atrophic in the category of respirallergy. Bronchiectasis and fetid bronchitis are included also. (He does exclude the "infectious cold" which is of short duration.) These diseases he feels are due to sensitivity to inhalants, foods, bacteria and chilling.

The study and treatment of these diseases consists of the usual allergic studies, elimination diets, desensitization, vaccines and drugs.

The remainder of the book describes in briefer form than the usual text-books of medicine the infectious diseases of the respiratory system,—diphtheria, pertussis,

pneumonia, pleurisy, tuberculosis and infarction. Two pages are devoted to neoplastic diseases of the lung.

The reviewer wonders whether the processes included under respirallergy can be explained so simply on one basis for disease, and many questions might be raised. The author, in anticipation of such criticism, states his conclusions are based on the study of hundreds of cases over the years and that a denial of these conclusions must be based on repeating his work rather than theorizing about it.

R. H. K.

★

Salt and the Heart. By Edward T. Yorke, M.D., Linden, N. J. Drapkin Books. 1953. Page 83. Price \$3.45.

This small volume by an attending cardiologist to the Alexian Brothers Hospital is written for the lay reader. It explains the role of salt in congestive failure and hypertension. The presentation is very readable and should help the intelligent patient in following the regimen outlined for him by his doctor. Foods are listed as to salt con-

tent and suggestions for diet are provided. The reviewer feels this book may well be recommended to the patient being managed on a salt poor diet.

R. H. K.

ANNOUNCEMENTS

The Medical Library Association will hold its Fifty-Third Annual Meeting June 15-18, 1954, in Washington, D. C. The headquarters will be the Hotel Statler, and the official host the Armed Forces Medical Library.

The program will include a discussion on medical research by embassy attaches, tours of the National Institutes of Health, the National Naval Medical Center, and of the Armed Forces Medical Library. Delegates to the Meeting will hear addresses by Dr. Detley Bronk, President of the Rockefeller Institute of Medical Research; Lt. Col. Frank B. Rogers, Director of the Armed Forces Medical Library; Mr. Verner Clapp, the Acting Librarian of Congress; and Dr. Raymond Zwemer, Chief of the Library of Congress' Science Division.

Further information can be obtained from Lt. Col. Frank B. Rogers, Armed Forces Medical Library, Seventh Street and Independence Avenue, S.W., Washington 25, D. C.

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Volume 47

MAY, 1954

Number 5

Abstract of the Proceedings of the House of Delegates of the Tennessee State Medical Association Nashville, April 18-20, 1954

FIRST SESSION, SUNDAY, APRIL 18

The House of Delegates was called to order by Speaker Charles C. Trabue IV, at 9:00 a.m. in the Ole South Room of the Maxwell House. The following invocation was delivered by the Executive Secretary, Mr. V. O. Foster:

"Father of all mankind, share with us this Easter Day, Thy wisdom, presence, and power, so that our deliberations and actions shall reflect honor upon us and our profession. Accept and bless our efforts in the Ministry of Healing and may we today and henceforth honor Thee with our service. We ask this in the name of the Great Physician. Amen."

Dr. Julian K. Welch, Jr., of Brownsville, Chairman of the Credentials Committee, reported a quorum present and that all of the delegates who were registered were qualified.

The minutes of the previous session were approved, with one slight correction by virtue of the following motion which was duly made, seconded, and carried: "I move that the word 'constitution' be stricken from the minutes as printed on page 167, left hand column, under the paragraph headed 'other business' and that the word 'constitution' be stricken from the published minutes in the May, 1953, issue of the JOURNAL."

Speaker Trabue then announced the personnel of the various reference committees as follows:

Credentials

Julian K. Welch, Jr., Chairman
Louis A. Killeffer
Thayer Wilson

Amendments to the Constitution and By-Laws

Henry B. Gotten, Chairman
Dana W. Nance
James Kirtley

Resolutions

William A. Garrott, Chairman
Ralph O. Rychener
H. B. Kirby-Smith

Reports of Officers

B. M. Overholt, Chairman
Walter D. Hankins
G. H. Berryhill

Reports of Committees

William G. Kennon, Jr., Chairman
Cecil Newell
W. C. Chaney

Outstanding G.P. Award

(The personnel of this committee remains secret at this time.)

New Society Charters

The next order of business was consideration of petitions for charters by the Coffee County Medical Society and the Hickman-Perry County Medical Society, which had been recently organized by the Executive Secretary and the councilors of these two districts.

Dr. Henry T. Kirby-Smith of Sewanee, councilor of the Fifth District, read a petition requesting a charter from the Association to the Coffee County Medical Society. The petition was signed by thirteen physicians who had formed a temporary organization pending the action of the House on this petition.

Upon motion of Dr. Oscar Noel, which was duly seconded and carried, the Coffee County Medical Society was duly chartered as a component county medical society of the Tennessee State Medical Association. An engraved and properly executed Certificate of Charter was presented to Dr. J. H. Farrar, the delegate from the Coffee County Medical Society, with appropriate ceremony.

Dr. D. C. Seward, acting for Dr. C. D. Walton, councilor of the Seventh District, presented a petition for a charter for the newly organized Hickman-Perry County Medical Society. Following the reading of the petition, Dr. Seward moved that the Society be granted a charter. The motion was duly seconded, put to a vote, and unanimously carried. The engraved Certificate of Charter was presented to Dr. Sam Ogle Jones of Centerville, who was the Society's duly elected delegate to this Association pending the issuance of the charter.

Amendment on the Table

The next order of business was consideration of a constitutional amendment which had lain on the table since the last annual session. The amendment was read by the Speaker as follows:

"It is proposed to amend Article VII, Section 2, of the Constitution by inserting the words 'Monday preceding' between the word 'on the' in the second line of said section so that the section as amended will read as follows: 'The Scientific Session shall begin on Monday preceding the second Tuesday in April, except as provided in Chapter II, Section 3, of the By-Laws. The Sections shall determine the dates of their meetings.'"

The Speaker called for discussion, and since there was none, the question was called for and the amendment was duly put to a vote and carried. The Speaker announced that the motion was carried by more than a two-thirds majority and that the amendment was duly adopted.

Introduction of Amendments

The next order of business was the introduction of amendments to the Constitution and By-Laws. Dr. Dan Thomas of Knox-

ville introduced a proposed amendment to the Constitution which would make A.M.A. Delegates members of the Association's House of Delegates. It was read and referred without discussion to the Reference Committee on Amendments to the Constitution and By-Laws. (All resolutions, whether adopted or rejected, will be quoted in full in subsequent sections of this abstract, which embodies the recommendations of the Reference Committee and the action taken upon the various amendments.)

Dr. H. L. Monroe introduced an amendment that proposed the addition of the Commissioner of Public Health of the State of Tennessee to the regular list of ex-officio members of the House of Delegates. The amendment was referred to the Reference Committee on Amendments.

Dr. R. H. Kampmeier introduced an amendment to the By-Laws, which would create an Advisory Committee to the State Department of Public Welfare. The amendment was read in full and referred to the Reference Committee on Amendments.

Introduction of Resolutions

The Speaker then stated that the next order of business was the introduction of resolutions. The Speaker stated that delegates should not discuss nor debate the resolutions at the time of introduction, but should simply read them in order that the Chair could get the resolutions before the proper reference committee. The Speaker suggested that all people interested in resolutions that were introduced should appear before the Reference Committee on Resolutions and express their feelings about them before the Committee. He also stated that full opportunity would be given for debate and discussion when the resolutions are reported out by the Reference Committee on Resolutions.

Dr. Dan Thomas presented a resolution which would provide for the creation of a council on insurance of the American Medical Association. The Resolution was referred to the Reference Committee on Resolutions.

Dr. Daugh W. Smith introduced a resolution requesting that the House of Delegates

authorize the Board of Trustees to appoint a committee to study the possibility of extending the membership of the Tennessee State Medical Association. The resolution was referred to the Reference Committee on Resolutions.

Dr. I. E. Phillips introduced a resolution which would provide for more rigid state control over insurance companies selling health and accident insurance in Tennessee. The resolution was referred to the Reference Committee on Resolutions.

Dr. Louis Killeffer introduced a resolution which would, if adopted, require the House of Delegates to issue a charter to one organization of Negro physicians in Tennessee. The resolution was referred to the Reference Committee on Resolutions.

Dr. N. S. Shofner introduced a resolution modifying the requirements for full service under The Tennessee Plan. The resolution was referred to the Reference Committee on Resolutions.

Dr. Daugh W. Smith introduced a resolution which would instruct the delegates to the A.M.A. to introduce a resolution requesting an allocation of funds to health and medical care projects sponsored by various state medical associations. The resolution was referred to the Reference Committee on Resolutions.

Dr. Daugh W. Smith introduced a resolution which would authorize the Board of Trustees to make available to The Tennessee Medical Foundation funds up to \$10,000. The resolution was referred to the Reference Committee on Resolutions.

The Speaker called for the introduction of additional resolutions, and since there was none, he moved to the next order of business, which was the reports of officers.

Reports of Officers

(The President's report was published in full in the April issue of the JOURNAL, and the report of the President-Elect was likewise published in the April, 1954, JOURNAL.)

Abstracts of the reports of all officers will be found on page 197-198 in this issue of the JOURNAL.

Following the reading of the Executive Secretary's report, Dr. C. M. Hamilton, Nashville, arose to a point of personal privilege in order to present a resolution. The

resolution was an expression of appreciation to Mr. Foster for his eight years of service as Executive Secretary, which was followed by rising applause. The House unanimously adopted the resolution of appreciation for Mr. Foster's services by a rising vote.

Dr. James C. Gardner, Nashville, Chairman of the Board of Trustees, then presented his report. The report was referred to the Reference Committee on Reports of Officers.

Dr. Gardner then asked permission to introduce a resolution which was appended to his report. The resolution was read in full and was referred to the Reference Committee on Resolutions. While Dr. Gardner had the floor, he presented Mr. Jack Ballentine to the House of Delegates, Mr. Ballentine being the Executive Secretary-Elect, who will succeed Mr. Foster on June 1, 1954.

Continuing officers reports, Dr. D. C. Seward, Nashville, Chairman of the Council, read his prepared report. The report was referred to the Reference Committee on Reports of Officers.

Reports of Committees

The following committee reports were submitted:

Scientific Work and Editorial Board—R.

H. Kampmeier, Nashville

Committee on Hospitals—J. L. Hamilton, Chattanooga

Legislation and Public Policy—C. M. Hamilton, Nashville

Liaison to the Public Health Department
—(Read by the Executive Secretary)

Memoirs—Henry L. Douglass, Nashville

Committee on Postgraduate Instruction—
Frank Whitacre, Nashville

Committee on Cancer—C. H. Heacock, Memphis

Committee on General Practice—C. B. Roberts, Sparta

Emergency Medical Service—James E. Wilson, Memphis

Committee on Industrial Health—Otis S. Warr, Memphis

Prepaid Insurance—N. S. Shofner, Nashville

Public Service—L. W. Edwards, Nashville

Liaison Committee to the UMWA—B. M. Overholt, Knoxville

Advisory Committee to the Woman's Auxiliary—Clyde Croswell, Memphis

Veterans Affairs—H. H. Shoulders, Nashville

Rural Health Committee—William N. Cook, Columbia

Grievance Committee—Ralph H. Monger, Knoxville

Blood Banks—M. L. Trumbull, Memphis

Physical Therapy—George W. Shelton, Chattanooga

Liaison to Department of Public Welfare—R. H. Kampmeier, Nashville

Tuberculosis Committee—Carl Hartung, Chattanooga

Mental Health Committee—Myrtle Lee Smith, Livingston

Autopsy Committee—Leland Johnson, Jackson

Health Project Contest Committee—Mrs. S. J. Sullivan, Cleveland

Labor Liaison Committee—D. W. Smith, Nashville

Legal Liaison Committee—George K. Carpenter, Nashville

Committee not reporting was:

The Committee on Insurance—B. F. Byrd, Sr., Nashville, Chairman

All committee reports were referred to the Reference Committee on Reports of Committees. These reports are abstracted on pages 199 to 204 in this issue of the JOURNAL.

Dr. L. W. Edwards, with the permission of the House, introduced a resolution at the completion of his committee report on Public Service. The resolution was referred to the Reference Committee on Resolutions.

The Chair stated that announcements were in order, and several were made at this time.

The Speaker announced the appointment of the temporary chairman to preside over the assembled delegates of each of the three grand divisions of the State for the purpose of electing a chairman and naming and electing a nominating committee. Temporary chairmen were as follows:

Dr. Malcolm Aste, West Tennessee

Dr. Henry T. Kirby-Smith, Middle Tennessee

Dr. S. J. Sullivan, East Tennessee

It was noticed that Dr. Sullivan was not in the room, and the Speaker appointed Dr. H. L. Monroe of Erwin as the temporary chairman for East Tennessee.

The House was then adjourned for lunch, to return at 1:30 p.m.

SUNDAY AFTERNOON SESSION, APRIL 18

The House of Delegates reconvened at 1:35 p.m., with Speaker Trabue presiding.

The Speaker called the House to order and announced that we would proceed with the unfinished business from the morning session.

Several committee reports were read that had not been presented during the morning session, and these reports were referred to the Reference Committee on Reports to the Committees.

At the conclusion of the reports of the committees the Speaker stated that we have had twenty-six reports out of twenty-eight committees, which was an unusually good record.

Special Reports

The Speaker then announced that the next order of business would be the hearing of special reports, and the Speaker presented the President of the Woman's Auxiliary to the Tennessee State Medical Association, Mrs. H. David Hickey of Chattanooga, who then read a prepared report. This report is on file in the Association's offices.

Mrs. Hickey then presented to the House of Delegates Mrs. W. W. Hubbard of Nashville, the President-Elect of the Woman's Auxiliary.

The second special report was read by Dr. R. B. Wood, Knoxville, Chairman of the A.M.A. delegation. The full copy of Dr. Wood's report is on file at headquarters offices.

The next item of business on the agenda was a report from the Reference Committee on the Outstanding G.P. Award and the election of the winner. The Committee was not prepared to report, and with the unanimous consent of the House, the speaker moved on to the next order of business, which was the announcement of the personnel of the Nominating Committee, as follows:

Dr. John B. Steele, Chattanooga, Chairman

Dr. J. Paul Baird, Dyersburg

Dr. G. H. Berryhill, Jackson

Dr. Henry Gotten, Memphis

Dr. Thomas Weaver, Nashville

Dr. William Hensley, Jr., Cookeville

Dr. C. B. Roberts, Sparta

Dr. George Inge, Knoxville

Dr. Louis Killeffer, Harriman

Election of Councilors

The Speaker then called on the Nominating Committee to submit nominations for Councilors for the First, Third, Fifth, Seventh, and Ninth Districts, these terms having expired at this session.

Dr. Steele, Chairman of the Committee, placed the following names in nomination for councilors:

For District No. 1, Dr. H. L. Monroe, Erwin

For District No. 3, Dr. Cecil E. Newell, Chattanooga

For District No. 5, Dr. Henry T. Kirby-Smith, Sewanee

For District No. 7, Dr. C. B. Walton, Mt. Pleasant

For District No. 9, Dr. J. Paul Baird, Dyersburg

There being no nominations from the floor, the Speaker cast the unanimous vote of the House for the names submitted by the Nominating Committee for election as councilors of the respective districts.

Additional Amendments and Resolutions

The next item on the agenda called for the introduction of additional amendments and resolutions.

No amendment to the Constitution and By-Laws was submitted.

Dr. N. S. Shofner, Nashville, introduced a resolution pertaining to the expansion of The Tennessee Plan. The resolution was referred to the Reference Committee on Resolutions.

Dr. John Burch, Nashville, introduced a resolution pertaining to muscular dystrophy. The resolution was referred to the Reference Committee on Resolutions.

Election of Outstanding G.P.

The Speaker announced that we would

go back to a piece of unfinished business—namely, the election of the outstanding general practitioner of the year. He stated that the committee, which had been kept secret until this time, was composed of the three immediate past presidents of the Association and he called upon Dr. R. H. Monger of Knoxville, Chairman, for their report. Dr. Monger, for the Reference Committee, placed in nomination the names of the following three physicians as candidates for the Outstanding General Practitioner Award:

Dr. Kelly Smythe, Bemis

Dr. B. H. Woodard, Spring Hill

Dr. T. E. Miller, Ripley

Dr. G. H. Berryhill, Jackson, spoke in favor of the candidacy of Dr. Kelly Smythe. Dr. Daniel Gray, Jr., spoke in favor of the candidacy of Dr. Woodard.

Following the brief nominating speeches, the Speaker asked the members of the House to prepare their ballots, and during the counting of the ballots several announcements were made.

The Speaker announced the results of the election for the outstanding general practitioner of the year, stating that Dr. Kelly Smythe of Bemis had been elected.

Dr. Jim Stanford of Memphis arose to a point of personal privilege, stating that all members of the House had been aware of the impressive manner in which the business of the House had been conducted during the past four years under the gavel of Dr. Charles C. Trabue IV. Dr. Stanford moved that the House of Delegates stand as a token of its appreciation to Dr. Trabue for the excellent manner in which he had handled the affairs of the House of Delegates. The House arose with applause.

There being no other business, the House was recessed until 9:00 a.m. Tuesday morning. The meeting adjourned at 3:30 p.m.

TUESDAY MORNING SESSION, APRIL 20

The House of Delegates reconvened at 9:00 a.m., with Speaker Trabue presiding.

Dr. Julian K. Welch, Jr., Chairman of the Credentials Committee, reported a quorum of qualified delegates present.

Mrs. H. David Hickey, President of the Woman's Auxiliary of the Tennessee State

Medical Association, presented Mrs. George Turner of El Paso, Texas, President-Elect of the Woman's Auxiliary to the American Medical Association, who spoke briefly.

Dr. George Carpenter, Nashville, requested the unanimous consent of the House to change the order of the day for the purpose of introducing a resolution. Dr. Carpenter read a resolution with respect to creating a permanent Liaison Committee to the Tennessee State Bar Association. The resolution was referred to the Reference Committee on Resolutions.

Date of Election of Officers

The Speaker called attention to the fact that the Constitution provided for the election of officers on Wednesday. He asked the House to express its will with respect to whether or not election of officers would be held on Tuesday by unanimous consent. Upon motion duly made and seconded, the House decided that they would hold the election of officers during the present session (Tuesday).

Introduction of Additional Resolutions

The Speaker then gave opportunity to any delegate for the introduction of resolutions.

Dr. Dan Thomas of Knoxville introduced a resolution with respect to physician-osteopathic relations. The resolution was referred to the Reference Committee on Resolutions.

Dr. Ralph Rychener of Memphis introduced a resolution which would instruct the Legislative Committee to aid in securing the passage of an act for the regulation of opticians. The resolution was referred to the Committee on Resolutions.

Dr. William Garrott of Cleveland introduced a resolution which would establish a Liaison Committee to the Public Health Council for consultation with reference to rules and regulations for the operation of the Hospital Service Act for the Indigent. The resolution was referred to the Reference Committee on Resolutions.

Dr. Clyde Crosswell of Memphis introduced a resolution which would authorize the Board of Trustees to provide \$1,000 of financial assistance to the Woman's Auxil-

iary. The resolution was referred to the Reference Committee on Resolutions.

Dr. William Garrott of Cleveland introduced a resolution requesting the sixteen nursing schools of Tennessee to institute a two-year course of nursing education. The resolution was referred to the Reference Committee on Resolutions.

Report of Reference Committee on Amendments

The Speaker then called for the report of the Reference Committee on Amendments, and Dr. Henry Gotten, Memphis, Chairman, submitted the following report:

The Reference Committee reviewed the proposed amendment for the Constitution introduced by Dr. Kampmeier, such resolution to read as follows:

"Amend Chapter VIII, Section 1(A), in order to add the following Standing Committee of the Association—

"11. Advisory Committee to the State Department of Public Welfare," and add Section 12 to said Chapter describing the duties of said Committee as follows:

"The Advisory Committee to the State Department of Public Welfare shall consist of five members to be appointed by the Board of Trustees for a term of five years, provided, that the first appointments shall be for the following terms: one member for one year; one member for two years; one member for three years; one member for four years; and one member for five years—all subsequent appointments to be for a term of five years.

"The Committee shall (1) assist the Department of Public Welfare formulate policies which concern the relationship of the Department to the Medical Profession.

"(2) Assist in determining disability for public assistance programs of the Department and other medical problems related to public assistance; and

"(3) Advise the Commissioner on the medical aspects of other Departmental projects or problems.

"The Committee, through its Chairman, shall make an annual report of its activities to the House of Delegates."

The Committee recommends the adoption of this amendment.

Upon motion duly made, seconded, and carried **the Resolution was unanimously adopted.**

The Reference Committee reviewed the amendments separately proposed by Drs. Monroe and Thomas. These proposed amendments were considered to be one and the same, and read as follows:

"Amend Article V of the Constitution of The Tennessee State Medical Association, relating to membership of the House of Delegates, as follows:

"Change the period at the end of Article V to a semicolon and add thereafter the following language:

"(4) the Association's delegates to the American Medical Association, and the Commissioner of Public Health for the State of Tennessee, provided said Commissioner of Public Health is a member in good standing of T.S.M.A."

The Committee recommends the adoption of this amendment.

Being an Amendment to the Constitution, the Speaker directed that it lay on the table until the next Annual Session.

Report of Reference Committee on Resolutions

The Speaker next called for the report of the Reference Committee on Resolutions, stating that the Committee had had a tremendous job to do. The Speaker asked the Chairman, Dr. William Garrott of Cleveland, to read each of the resolutions separately, and Dr. Garrott presented the following report and recommendations.

Resolution on Expanding Membership

BY DR. DAUGH W. SMITH

BE IT RESOLVED, That the House of Delegates authorize the Board of Trustees to appoint a Committee to study the possibilities of expanding the membership of the Tennessee State Medical Association. The Committee shall report to the fall meeting of the Board of Trustees.

The Reference Committee recommends the adoption of this resolution. The question was called for, the motion was put to a vote and carried and **the resolution was duly adopted.**

Resolution Related to More Rigid Control of Insurance Companies

BY DR. I. E. PHILLIPS

WHEREAS, the Sullivan-Johnson County Medical Society is opposed to all forms of compulsory health insurance; and

WHEREAS, successful opposition to compulsory health insurance is dependent on satisfactory functioning of our voluntary health insurance program; and

WHEREAS, it is mutually advantageous to the insurer, the insured, the hospitals, and the medical profession that policies which provide hospitalization benefits should have certain minimum, uniform, standard provisions to the end that misunderstandings and hardships will not arise.

BE IT RESOLVED, that the Tennessee State Medical Association favors much more rigid state control over insurance companies selling this type of insurance, that the policyholder may be assured of reasonable value received for his insurance dollar and that he may be protected against cancellation of his policy at such time as he becomes a poor risk and probably uninsurable by another company.

BE IT FURTHER RESOLVED, that the House of Delegates of the Tennessee State Medical Association instruct the Insurance Committee to bring all possible pressure to bear on the State Insurance Commissioner for investigation of the status of the companies selling this type of insurance in the State of Tennessee.

The Committee recommended the adoption of the resolution, and upon motion duly made and seconded, **the resolution was duly adopted.**

Resolution on Negro Membership

BY DR. LOUIS KILLEFFER, Harriman

WHEREAS: The Code of Ethics of the medical profession, set forth in the Hippocratic Oath, to which all members of the Tennessee State Medical Association have pledged allegiance, calls for the sharing of our knowledge and substances with our fellows in the profession; and

WHEREAS: It is the policy of this Association to carry the humanitarian intent of service to the public to all people; and

WHEREAS: A purpose of the Tennessee

State Medical Association, as set out in Article II of the Constitution, is "to federate and bring into one compact organization the entire medical profession of the State of Tennessee . . . with a view to the extension of medical knowledge, and to the advancement of medical science, and to the elevation of the standard of medical education," to the end that "the profession shall become more capable and honorable within itself and more useful to the public . . . ; and

WHEREAS: Suffering and death draw no color line, and the profession shall become more honorable within itself and more useful to the public, and the purposes of the Association shall be more effectively served by bringing into "one compact organization the entire medical profession of the State of Tennessee," as stated in the Constitution; and

WHEREAS: Section 4 of Chapter XII of the By-Laws of the Association provides:

" . . . that the House of Delegates may issue a charter to one organization of Negro physicians in Tennessee with a view to bringing into the one component society all the Negro physicians in Tennessee who are worthy of membership in the Tennessee State Medical Association . . . "

NOW, THEREFORE, BE IT RESOLVED: That the House of Delegates of the Tennessee State Medical Association now assembled in Nashville for the 119th Annual Session of the Association, issue a charter to the Volunteer State Medical Society, as a component society, in compliance with the provisions of Section 4 of Chapter XII of the By-Laws of the Tennessee State Medical Association, thereby granting regular membership, together with the privileges, duties and obligations conferred by such membership.

BE IT FURTHER RESOLVED: That the House of Delegates instruct the Board of Trustees to appoint a special committee on Liaison to the Volunteer Society to work out all problems of membership to the mutual satisfaction of the new component society and the parent organization.

The Reference Committee on Resolutions recommends the rejection of this resolution.

The Committee feels that it is out of order, there being no evidence that the Volunteer State Medical Society has petitioned for membership. (The By-Laws provide for the chartering of a component Negro Medical Society upon petition to the House of Delegates.)

A motion to reject was seconded by Dr. D. C. Seward of Nashville. The Speaker then called for discussion. The resolution was discussed by Dr. Louis Killeffer, Dr. Jim Stanford, Dr. L. W. Diggs, Dr. Ed Newell, Dr. R. H. Hutcheson, Dr. C. B. Roberts, Dr. Arthur Porter, Jr., Dr. Joseph Johnson, Dr. Hunter Steadman, Dr. Roy Money.

The question on the motion to reject the resolution was called for, and upon voice vote, the Speaker ruled that the ayes definitely had the decision, **and the resolution was rejected.**

Resolution on Modification of The Tennessee Plan

Introduced by DR. N. S. SHOFNER

WHEREAS, the basic Principles and Objectives controlling The Tennessee Plan adopted by this House in 1949 provide that the only requirements for full service under the Plan are: (1) for the patient to be within the income limits (\$2,400-\$4,200 per year), (2) use the services of a participating physician, and (3) assign the insurance benefit to the physician; and

WHEREAS, many patients now hold additional policies in addition to The Tennessee Plan and receive insurance benefits far in excess of the participating physician's fee allowance; and

WHEREAS, participating physicians regard this situation as an economic injustice to the physician, and that they should be allowed to charge a larger fee in such cases than The Tennessee Plan provides;

NOW, THEREFORE, BE IT RESOLVED BY THE HOUSE OF DELEGATES OF THE TENNESSEE STATE MEDICAL ASSOCIATION THAT:

1. The basic principles of The Tennessee Plan be modified so as to provide that, in cases where insured patients are otherwise entitled to full service, but hold one or more additional policies which cover the same conditions, the participating physician shall not be required to accept The Tennes-

see Plan as full pay in such instances; and

2. That the Prepaid Insurance Committee advise all underwriters, the participating physicians, and the general public of this action.

The Committee recommended adoption of the above resolution. Motion to adopt was seconded by Dr. Dana Nance, and upon voice vote **the resolution was duly adopted.**

Resolution on Providing Financial Assistance to
The Tennessee Medical Foundation

BY DR. DAUGH W. SMITH

BE IT RESOLVED, by the House of Delegates of the Tennessee State Medical Association:

1. That the Board of Trustees of the Tennessee State Medical Association be hereby instructed to make available to the Tennessee Medical Foundation funds up to \$10,000.00 for the purpose of underwriting the Foundation's efforts to provide adequate medical care for those areas or communities deemed in critical need of medical care by the Foundation; and

2. That the Board of Trustees be hereby authorized to provide the above funds out of the Investment Fund of the Association; and

3. That the funds authorized in this Resolution shall be repaid to the Tennessee State Medical Association when and if the financial resources of the Foundation permit.

The Committee Chairman moved the adoption of the resolution. Dr. Smith, the author of the resolution, spoke briefly regarding the need for financial support which would underwrite the financial success of the present activities of The Tennessee Medical Foundation.

The question was called for and the motion put to a vote and **the resolution was adopted.**

Resolution on A.M.A. Support for Philanthropic and
Educational Projects

BY DR. DAUGH W. SMITH

WHEREAS: the doctors of Tennessee contribute many thousands of dollars in annual dues to the American Medical Association; and

WHEREAS: the American Medical Association has contributed many thousands of dol-

lars to the National Foundation for Medical Education; and

WHEREAS: the funds of said Foundation are donated to medical schools, including tax supported medical schools:

NOW THEREFORE BE IT RESOLVED: that the House of Delegates of the Tennessee State Medical Association hereby instructs its delegates to the American Medical Association to introduce a resolution in the House of the American Medical Association requesting that a mechanism be set up for allocating some of these funds to projects sponsored by various State Medical Associations, which projects are philanthropic and educational, or in the nature of promoting public relations for the medical profession.

The Committee Chairman moved the adoption of the resolution. The motion was seconded by Dr. Nance and was discussed by Dr. Youmans, Dr. Daugh W. Smith, and others.

The question was called for and upon vote the Speaker ruled that he could not determine whether or not the motion had received a majority. He called for a standing vote, and the results indicated forty-one in favor and twenty-eight opposed. The Speaker then declared the motion carried and **the resolution duly adopted.**

Resolution on Securing Headquarters Office Property

BY DR. JAMES C. GARDNER

BE IT RESOLVED BY THE HOUSE OF DELEGATES OF THE TENNESSEE STATE MEDICAL ASSOCIATION:

THAT the Board of Trustees of the Association are hereby authorized and directed to investigate the desirability and advisability of acquiring property to house the headquarters offices of the Association; and

BE IT FURTHER RESOLVED, that if the Board finds that the acquisition of such property is desirable and in the interest of the Association, then the Board shall have full authority to rent, lease, purchase, and/or construct such a facility, and shall have full power to enter into any agreements deemed necessary by the Board with respect to title, rents, maintenance, and operation of such facility.

The Committee Chairman moved the adoption of the resolution. There was no

discussion, and the question was called for and the motion was put to a vote and **the resolution was adopted unanimously.**

Resolution on the Establishment of a Council on Insurance
by the American Medical Association

By DR. DAN R. THOMAS, Knoxville

WHEREAS, for a number of years the American Medical Association, as part of their announced program, has urged the public to participate in prepaid insurance programs to aid in the payment of hospitalization and/or the payment of physician fees; and

WHEREAS, the American Medical Association has for many years established Councils for the standardization of drugs, medical equipment, hospitals, etc.; and

WHEREAS, many practicing physicians believe that the prepaid insurance program is or will be jeopardized by the lack of uniformity of the insurance policies written by the various companies, by the claims made in some of the published advertisements of these policies, by the false impressions given by some agents selling the policies, and by the failure of the public to read and/or understand the policy they buy;

BE IT RESOLVED, that the Tennessee State Medical Association respectfully request that the American Medical Association create a Council on Insurance to study this problem, to establish standards which are fair to the public and the insurance companies alike, and to set their seal of approval on all policies meeting these standards, so that the practicing physician may be intelligently advised in these matters; and

BE IT FURTHER RESOLVED, that a copy of this resolution be sent to the American Medical Association, state medical associations, county or unit medical societies, and delegates to the next Convention of the American Medical Association promptly.

The Chairman moved the adoption of the resolution. The Speaker called the attention of the House to the fact that the body of the resolution referred to some act of the Knoxville Academy of Medicine stating that this House could not act for the Knoxville Academy of Medicine. Upon motion duly made, seconded, and carried, the resolution was amended to insert the words "House of

Delegates of the Tennessee State Medical Association" in the body of the resolution rather than the "Knoxville Academy of Medicine."

The question was called for, and the resolution as amended was put to a vote **and was unanimously adopted.**

Resolution on Liaison Committee to The Bar Association

By DR. GEORGE K. CARPENTER

WHEREAS, although it is generally recognized that the relations between the legal and medical professions regarding the taking of testimony in civil cases and in like matters is good, some friction and misunderstanding has arisen from time to time between doctors and lawyers; and

WHEREAS, a joint committee of the Tennessee State Medical Association and the Bar Association of Tennessee have met and recommended the adoption of the following program of action by both Associations, viz.:

1. That a joint committee from the Tennessee State Medical Association and the Bar Association of Tennessee be established, the membership of such committee to be appointed by the President of each Association, said committee to meet from time to time on an informal basis to consider matters of mutual interest.

2. That the Associations furnish to each other articles relating to legal-medical questions to be published in their respective journals, reviews, or other publications; and further, that they exchange speakers at their various meetings and conventions.

3. That the two Associations jointly sponsor Legal-Medical Institutes, both on a local and state level from time to time.

4. That each Association urge upon the faculties of the law and medical schools of this State the desirability of courses of study in relation to legal-medical problems, especially relating to obtaining and presenting medical evidence in court; and

WHEREAS, it was the unanimous opinion of this Joint Committee that most of the difficulties could be avoided by the adoption of this program.

NOW THEREFORE BE IT RESOLVED, that the above four points of joint action by the two Associations are hereby adopted as part of

the program of the Tennessee State Medical Association, and that the Board of Trustees of this Association is hereby empowered to appoint the representatives from this Association on the Joint Committee.

Upon motion duly made and seconded, **the resolution was duly adopted.**

Resolution on Expanding the Tennessee Plan

BY DR. N. S. SHOFNER

WHEREAS, The time has arrived to expand the covering of The Tennessee Plan; and

WHEREAS, Proposals to this effect have been made by representatives of the Anesthesiologists, Internists, Radiologists, and Pathologists;

BE IT RESOLVED, That the House of Delegates authorizes and instructs the Executive Committee of the Prepaid Insurance Committee to study these proposals and report to the House at the next Annual Meeting.

The Committee moved the adoption of the resolution, which was duly seconded, **and the resolution was adopted.**

Resolution on Muscular Dystrophy

BY DR. JOHN BURCH

BE IT RESOLVED, That the House of Delegates of the Tennessee State Medical Association is hereby authorized and request the Board of Trustees to appoint an Advisory Committee on Muscular Dystrophy. The purpose of said committee is to advise the Muscular Dystrophy Association so that its affairs may be conducted according to the principles of medical ethics.

The Reference Committee stated that it could not determine that this Association had any comparable committees for other activities similar to the Muscular Dystrophy group, and, therefore, would not recommend the setting of precedent by the adoption of this resolution. The Committee, therefore, referred the resolution back to the House for discussion from the floor.

Dr. Dana Nance moved that the resolution not be adopted. The motion was seconded by Dr. Joe Johnson, and following a brief discussion the question was called for, the motion was put to a vote, and carried. **The resolution was not adopted.**

Resolution on Osteopathy

BY DR. R. B. WOOD, Knoxville

WHEREAS, The question of osteopathy and the relationship of the osteopathic physician and the doctor of medicine has been made an issue in the American Medical Association; and

WHEREAS, The American Medical Association has referred this issue to the various state medical societies for instruction by the several state medical societies to their delegates; and

WHEREAS, This question has now been presented to the Tennessee State Medical Association by its delegates to the American Medical Association;

BE IT RESOLVED, That (1) The House of Delegates of the Tennessee State Medical Association, assembled in formal session, Nashville, Tennessee, April 18, 1954, declares that we shall consider osteopathy as a cult until such time as the principal osteopathic schools of this Nation shall themselves remove the cultist principle upon which osteopathy was founded. (2) Doctors of medicine may teach in osteopathic schools if they choose when such activity by doctors of Medicine is approved by the local medical society to which the doctor of medicine belongs. (3) The American Medical Association delegate to the several States the question of determining the relationship that shall exist between the doctors of medicine within that State and the osteopathic physician within that State.

The Reference Committee Chairman moved the adoption of the resolution. There being no discussion, the question was called for, the motion was put to a vote, **and the resolution was unanimously adopted.**

Resolution on A.M.A. Policy Related to Public Relations

BY DR. C. B. ROBERTS, Sparta

The Chairman of the Reference Committee stated that the above titled resolution had been withdrawn by the author.

Resolution on Regulating Opticians

BY DR. LEE F. CAYCE

A resolution petitioning the Legislative Committee of the Tennessee State Medical Association to support the effort of the

Tennessee Academy of Ophthalmology and Otolaryngology to pass certain legislation.

BE IT RESOLVED, That the Tennessee Academy of Ophthalmology and Otolaryngology request the Tennessee State Medical Association, through its Legislative Committee, aid in securing passage of "An Act to define and regulate the practice of dispensing Opticians in Tennessee, and to punish violators thereof."

The Reference Committee Chairman moved the adoption of the resolution. The motion was duly seconded, the question was put, and **the resolution was duly adopted.**

Resolution on Nursing

BY DR. L. W. EDWARDS

WHEREAS, there is an acute need for personnel for bedside nursing in Tennessee, and this State lags behind many others in the production of this type of medical personnel; and

WHEREAS, the Public Service Committee of the Tennessee State Medical Association is pledged, under the Tennessee Ten, to do everything possible to increase nurse recruitment;

BE IT THEREFORE RESOLVED, that the House of Delegates of this Association request the sixteen nursing schools in Tennessee to institute a two-year nurse education course, wherever possible.

BE IT FURTHER RESOLVED, that this House of Delegates join the Tennessee State Nurses Association in the support of a measure in the next legislature to establish a commission to survey exact needs for nursing personnel and to make recommendations for filling these needs.

The Reference Committee Chairman moved the adoption of the resolution. The question was called for, the motion was put to a vote, and **the resolution was duly adopted.**

Resolution on Liaison of the Public Health Council

BY DR. L. W. EDWARDS

WHEREAS, The Hospital Service Act for the Indigent was sponsored by the Tennessee State Medical Association; and

WHEREAS, It is now made into Public Law becoming effective July 1, 1954; and

WHEREAS, The Public Health Council re-

quests that a liaison committee be established between the Tennessee State Medical Association and the Public Health Council of the State of Tennessee;

NOW THEREFORE BE IT RESOLVED: That the House of Delegates authorize the appointment of a temporary liaison committee between the Tennessee State Medical Association and the Public Health Council of the State of Tennessee for the establishing of rules and regulations for the implementation of the Indigent Hospital Service Act.

The Committee Chairman moved the adoption of the resolution. The motion was duly seconded and put to a vote, and **the resolution was duly adopted.**

Resolution on Financial Assistance to the
Woman's Auxiliary

BY DR. CLYDE CROSWELL

Your Advisory Committee to the Woman's Auxiliary to the Tennessee State Medical Association requests this House of Delegates to authorize the Board of Trustees to amend its budget so as to allocate the sum of \$1,000 to the Auxiliary for the ensuing Auxiliary year. This \$1,000 will include the \$300 previously allocated per year for the purpose of publishing a Woman's Auxiliary News Letter. This News Letter has been instrumental in increasing the membership of the Auxiliary from 750 members to more than 1,100. The additional funds are needed to carry on the business affairs of the Auxiliary, including certain expenses of the officers and Board members.

The Reference Committee Chairman moved the adoption of the resolution. The motion was duly seconded and was discussed by Dr. James C. Gardner, Chairman of the Board of Trustees, and Dr. William Garrott. The question on the adoption of the resolution was put to a vote, and the motion carried and **the resolution was adopted.**

Dr. Garrott, Chairman of the Reference Committee on Resolutions, stated that that completed the report of the Committee and moved the adoption of the report of the Committee as a whole.

Upon motion made and seconded, the report of the Reference Committee on Resolutions **was adopted as a whole.**

Report of the Reference Committee on Reports of Officers

The Speaker then called for the report of the Reference Committee on Reports of Officers, of which Dr. Ben Overholt of Knoxville was Chairman. Dr. Overholt tendered the following report:

Report of the President

Your Committee on Reports of Officers has reviewed the report of Dr. A. M. Patterson, President of your Association, and wishes to commend Dr. Patterson for his work, for his devotion to duty during the past year as state president, and for his many accomplishments which have served to throw accumulated credit to your State Association.

Your Committee wishes to recommend adoption of the report.

The motion to adopt the report of President Patterson was put to a vote and unanimously carried.

Report of the President-Elect

Your Committee on Reports of Officers has reviewed the report of the President-Elect, Dr. John R. Thompson, Jr., of Jackson, and wishes to commend Dr. Thompson for his report. The Committee recommends its adoption. Upon motion duly made and seconded, the report of the President-Elect was duly adopted.

Report of the Secretary-Editor

Your Committee on Reports of Officers has reviewed the report of the Secretary-Editor, Dr. R. H. Kampmeier, and wishes to commend Dr. Kampmeier for his continued fine contribution to organized medicine in Tennessee. Your Committee feels that the *JOURNAL* of the Tennessee State Medical Association reflects the devotion and hard work which Dr. Kampmeier has contributed. Your Committee recommends the adoption of his report.

Upon motion duly made, seconded and carried, the report of the Secretary-Editor was unanimously adopted.

Report of the Executive Secretary

Your Committee on Reports of Officers has reviewed the report of your Executive Secretary, Mr. V. O. Foster. It goes with-

out saying that the contributions of your Executive Secretary have been outstanding to your State Medical Association.

The report of the Executive Secretary for the years 1945-1953 reflects outstanding work. Your Committee wishes to commend the Executive Secretary for a job well done beyond the call of duty and recommends the adoption of his report.

On motion duly made and seconded the report of the Executive Secretary was unanimously adopted.

Report of the Board of Trustees

Your Committee on Reports of Officers has reviewed the report of the Board of Trustees. Your Committee feels that the Tennessee State Medical Association is indeed fortunate in having a Board of Trustees which typifies such devotion to duty. Your Committee feels that the time and self-sacrifice of these men deserves the highest praise from your State Association and the Committee so recommends. It recommends the adoption of this report. Upon motion duly made, seconded, and carried the report of the Board of Trustees was unanimously adopted.

Report of the Chairman of the Council

Your Committee on Reports of Officers has reviewed the report of the Chairman of the Council and wishes to commend Dr. Seward for the manner in which his problems have been solved. Your Committee recommends the adoption of his report. Upon motion duly made, seconded, and carried, the report was duly adopted.

Dr. Henry Gotten moved the acceptance of the report of the Reference Committee on Reports of Officers as a whole. Upon motion duly made, seconded, and carried, the report of the Reference Committee was adopted as a whole.

Report of Reference Committee on Reports of Committees

BY DR. WILLIAM G. KENNON, JR.

The Speaker then called for a report of the Reference Committee on Reports of Committees, of which Dr. William G. Kennon, Jr., of Nashville, was Chairman. Dr. Kennon tendered the following report:

Scientific Work and Educational Board—

We recommend acceptance of this report with commendation.

Hospitals—We recommend acceptance of this report.

Legislation and Public Policy—We recommend acceptance of this report with commendation.

Liaison to Public Health Department—We recommend acceptance of this report.

Insurance—No report was submitted for this Committee.

Memoirs—We recommend acceptance of this report.

Postgraduate Instruction—We recommend acceptance of this report and call attention of members of the Middle Tennessee area to the excellent course on Obstetrics which is now in progress.

Cancer—We recommend acceptance of this report.

General Practice—We recommend acceptance of this report with commendation.

Emergency Medical Service—We recommend acceptance of this report.

Industrial Health—We recommend acceptance of this report.

Prepaid Insurance—We recommend acceptance of this report and urge the Prepaid Insurance Committee to continue their efforts to obtain more complete coverage of insured individuals through cooperation with the underwriters.

Public Service—We recommend acceptance of this report and express the hope that it will be read by every physician in Tennessee when it is published.

Liaison Committee to the United Mine Workers of America—We are impressed by the excellent work of this Committee and recommend the acceptance of this report.

Advisory Committee to the Woman's Auxiliary—We recommend acceptance of this report.

Veterans Affairs—We have reviewed this report with care. We believe that the financial support of this Committee is a matter for the Board of Trustees to decide. We would recommend acceptance of this report.

Rural Health—We recommend acceptance of this report with commendation.

Grievance—The one case to come before

the Grievance Committee during the past year was settled in a manner satisfactory to all parties concerned. We recommend acceptance of this report.

Blood Banks—The Blood Bank Committee has emphasized that the operation of a Blood Bank is a phase of medical practice and that it should not be controlled by lay organizations. We believe that this point should be called to the attention of the House of Delegates. We recommend acceptance of this report.

Physical Therapy—We recommend acceptance of this report.

Liaison to the Department of Public Welfare—We recommend acceptance of this report.

Tuberculosis—We recommend acceptance of this report.

Mental Health—We recommend acceptance of this report with commendation.

Autopsy—We recommend acceptance of this report and note that the Chairman of this Committee has requested that the Committee be dissolved since its mission has been accomplished.

Health Project—We recommend acceptance of this report.

Labor Liaison—We recommend acceptance of this report with commendation.

Legal Liaison—We recommend acceptance of this report.

Dr. Kennon then moved the adoption of the report of the Reference Committee on Reports of Committees as a whole. The motion was seconded by Dr. Newell, was put to a vote, and unanimously carried.

Supplemental Reports

The Speaker then stated that there was opportunity for the presentation of any supplemental reports, from either officers or committee chairmen. Dr. D. C. Seward, Nashville, Chairman of the Council, reported that during a meeting of the Council the previous day they had discovered that some physicians belonged to more than one local county medical society and that he did not feel this situation was covered in the present Constitution and By-Laws. The question of whether a physician could hold membership in more than one component society was discussed by Dr. Seward and Dr. Gar-

rott and the Speaker. Dr. Seward then moved that the House of Delegates go on record as opposing a physician's belonging to two separate medical societies at the same time.

The motion was severally seconded. The motion was discussed by Dr. Black, Dr. Seward, and Dr. Phillips. Dr. Seward stated that he would like to withdraw his motion dealing with the question and to introduce later an amendment to the Constitution, which would lay over until next year, which would clearly prohibit physicians from belonging to more than one county medical society.

The Speaker then called for any other supplemental reports of officers or committees. None was submitted.

Dr. Sheridan stated that he thought it would be an excellent thing for all amendments, resolutions, and reports to be submitted to the Executive Secretary well in advance of the meeting in order that they could be mimeographed and distributed among the House, stating that such a procedure would give them opportunity to study them in advance.

The Executive Secretary stated that if such materials could be received within a reasonable time prior to the meeting that all of them could be mimeographed and distributed in the special folder for the members of the House.

Amendment to Constitution Introduced

Continuing under other old or new business, Dr. James C. Gardner introduced a proposed amendment to the Constitution under Article VIII, Section 5, page 5, stating that the Constitution now reads as follows:

"All Officers of the Association, except the Councilors, shall be elected on Wednesday of the Annual Meeting and shall assume office when elected."

It is proposed to change the word "Wednesday" to "Tuesday."

The amendment was laid on the table and will be acted upon at the next annual meeting.

Tribute to Dr. R. B. Wood

Dr. J. C. Lentz of Blount County called the attention of the House to the fact that

Dr. R. B. Wood of Knoxville, after nine years of faithful service in the House of Delegates of the A.M.A., had requested that his name not be placed in nomination for re-election. Dr. Lentz then moved that the House go on record as regretting Dr. Wood's decision, commending him for his excellent service in the House of Delegates and of saying to him, "Well done, thou good and faithful servant."

The motion was severally seconded and unanimously carried with applause.

Report of Nominating Committee and Election of Officers

The Speaker then called for the report of the Nominating Committee and stated that the House would proceed with the election of officers. Dr. John B. Steele, Chattanooga, Chairman of the Nominating Committee, submitted the following report:

"Mr. Speaker, and members of the House, I read an old Negro prayer the other day that fits this situation pretty well. He said, 'Oh, Lord, please fill my mouth with worthwhile stuff and nudge me when I've said enough.'" (Laughter.)

The Chairman of the Committee placed the following names in nomination for the various offices as outlined below:

For President-Elect—Dr. Charles C. Traubue IV, Nashville; Dr. W. K. Owen, Pulaski; Dr. O. Reed Hill, Lebanon

Speaker of the House—Dr. Robert N. Buchanan, Jr., Nashville

Vice-Speaker of the House—Dr. Joseph Johnson, Jr., Chattanooga

Secretary-Editor—Dr. R. H. Kampmeier, Nashville

Trustee for West Tennessee—Dr. Carrol Turner, Memphis

Vice-President from West Tennessee—Dr. S. Fred Strain, Memphis

Vice-President from Middle Tennessee—Dr. J. Fred Terry, Cookeville

Vice-President from East Tennessee—Dr. Walter Hankins, Johnson City

Delegate to the A.M.A.—Dr. Charles C. Smeltzer, Knoxville

Alternate Delegate to the A.M.A. for Dr. Smeltzer—Dr. H. L. Monroe, Erwin

Nominations for the Public Health Coun-

cil, three of whom will be subsequently appointed by the Governor, were as follows:

Dr. Malcolm Tipton, Union City
 Dr. R. N. Buchanan, Jr., Nashville
 Dr. R. C. Kimbrough, Sr., Madisonville
 Dr. L. C. Jackson, Dickson
 Dr. J. P. Anderson, Nashville
 Dr. Dana Nance, Oak Ridge
 Dr. E. L. Caudill, Jr., Elizabethton
 Dr. J. C. Lentz, Maryville
 Dr. Henry B. Gotten, Memphis

Nominations for Trustees of the State Tuberculosis Hospitals, one of whom will be subsequently appointed by the Governor:

Dr. W. W. Wilkerson, Nashville
 Dr. Arch Bullard, Chattanooga

Following the report of the Nominating Committee, the ballots for the office of President-Elect had been collected and counted, and the Executive Secretary announced the following results:

For Dr. Charles C. Trabue IV, as	
President-Elect	68 Votes
Dr. O. Reed Hill	0
Dr. W. K. Owen	1

The Executive Secretary was presiding at this time and upon the results of the votes submitted, he declared Dr. Charles C. Trabue duly elected as President-Elect.

For the remainder of the offices listed above there were no nominations submitted from the floor, and each was voted upon as separately presented by the Nominating Committee, and in each instance they were elected to their respective offices by unanimous vote.

The Chairman appointed Dr. L. W. Edward, Dr. Ed Newell, and Dr. H. B. Everett to escort Dr. Trabue, newly elected President-Elect, to the scientific sessions and present him to the membership of the Tennessee State Medical Association.

Chattanooga—Next Year

The next order of business was the selection of the place for the next annual meeting.

Dr. Ed Newell of Chattanooga extended a cordial invitation to the Association to meet in Chattanooga in 1955. There being no other invitation, the House of Delegates accepted with pleasure the invitation of the Chattanooga-Hamilton County Medical Society to meet in Chattanooga next year.

During the announcements which were made at this time, Dr. D. C. Seward, Nashville, asked for and received the unanimous consent of the House for the purpose of introducing an amendment to the By-Laws. Said amendment is as follows:

To amend Chapter XII, Section 7, of the By-Laws by adding the following words: "but shall not hold membership in more than one component society."

Inasmuch as the Constitution and By-Laws provide that an amendment to the By-Laws must lay over for one full day before action can be taken, the Chairman ruled that the amendment would have to lay on the table until the next regular annual meeting of the Association.

Dr. H. B. Everett of Memphis moved that the House extend a vote of thanks to Davidson County Medical Society and the Nashville Academy of Medicine for providing such fine entertainment for the Association this year. The motion was seconded and put to a vote and unanimously carried.

Following additional announcements, Dr. James C. Gardner, Nashville, moved that the House adjourn sine die. The motion was seconded, put to a vote, and unanimously carried.

The meeting adjourned at 11:30 a.m.

V. O. FOSTER

Executive Secretary

Abstracts of Reports of Officers and Committees

Read Before the House of Delegates of the

Tennessee State Medical Association, April 18, 1954

Report of the President

The report of the President, Dr. A. M. Patterson of Chattanooga, was published in full on pages 140-142 of the April, 1954, issue of the JOURNAL.

Report of the President-Elect

The inaugural address of the President-Elect, Dr. John R. Thompson, Jr., of Jackson, was published in full on pages 135-139 of the April issue of the JOURNAL.

Report of the Secretary-Editor

R. H. KAMPMEIER, M.D.

"Your editor hopes that the Objectives of the JOURNAL of the Tennessee State Medical Association continue to be met.

"The pages of Volume 46 for 1953 total 496. The scientific to non-scientific material stood in a 65 to 35 ratio. This is a ratio of the order favored by most journals and desired as a minimum by the members of the Association as expressed in our poll of more than a year ago.

"The results of the poll conducted last year to learn the reactions of the members to the JOURNAL were published during the year. Almost 700 answers constituted an adequate sample for evaluation purposes. It seems that the JOURNAL is meeting the desires of the membership.

"According to the poll the pages of the President, Executive Secretary and Public Service officer are read almost universally. This is most gratifying to your Editor for on these pages are paraded the many important organizational activities of the Tennessee State Medical Association.

"The members of the Committee on Scientific Work have been offered an opportunity to take part in editorial writing."

Report of the Executive Secretary

V. O. FOSTER

Mr. Foster's report discussed briefly the six major areas of responsibility of the headquarters office. The report differed from previous ones in that it covered a review of eight years, rather than just the year immediately preceding.

Among the significant comparisons which were made in the report the following stood out:

In 1945 there were 1,764 members of the Association.

In 1953 there were 2,246 members, an increase of 27%.

In 1945 the cash receipts of the Association for the year were \$22,121.53.

In 1953 the cash receipts were \$73,793.24, an increase of 334%.

In 1945 membership dues produced \$8,928.

In 1953 membership dues produced \$51,095, an increase of 573%.

In 1945 JOURNAL advertising revenue was \$10,437.64.

In 1953 advertising revenue was \$16,502.32, an increase of 60%.

In 1945 the investment fund was \$25,122.21.

In 1953 the fund balance was \$74,975.67, an increase of 299%.

The report stated that the headquarters office space had been doubled since 1945 and that the value of the office equipment had been increased 500%.

Mr. Foster stated that although these facts revealed significant growth over this period, he felt that there had been a comparable increase in the spirit, leadership, and constructive activities of the Association. He observed that these activities, rather than the bank balances and the number of members, really indicated the virility of this Association.

He stated that in these eight years of service he had seen the Association grow in service to its members, in national prestige and leadership, and in services to the public. The report stated that these outstanding accomplishments must be shared with the House, the Board of Trustees, the officers, the Council, the headquarters staff, and the more than 100 committeemen, all of whom have worked diligently for the advancement of the Association.

The report closed with a prediction of continued progress in the years ahead, and Mr. Foster stated that he believed with the Poet Browning that "the best is yet to be."

Report of the Board of Trustees

JAMES C. GARDNER, M.D., *Chairman*

The report stated that the Board of Trustees holds two stated meetings annually, one immediately following the annual session of the House of Delegates and a semi-annual session in the fall.

Provision is made for emergency sessions at the call of the Chairman, and one additional called meeting was held during the previous year.

In order to expedite policy decisions needing immediate attention, the members of the Board have been polled on questions by mail or by long distance telephone conferences. All mail votes are officially confirmed at the next regular meeting of the Board and entered into the official minutes.

Dr. Gardner then gave a résumé of the action taken at the three meetings of the Board during the past year. (These minutes have been ab-

stracted and published in the *JOURNAL* of the Association from time to time.)

In summary, Dr. Gardner stated that the Board of Trustees acts in an interim capacity for the administration of the affairs of the Association. Its actions are always conditioned upon previous actions of the House or upon Constitution and By-Law provisions.

In addition to being the interim policy-making body, the Board of Trustees is also responsible for the financial management of the Association. Dr. Gardner, as Chairman of the Board, also acts as Treasurer, signing all checks for the expenses of the Association.

Dr. Gardner stated that for the past four years the Board of Trustees had adopted an annual budget which had brought about rigid control over the finances of the Association. The Executive Secretary submits quarterly financial reports to each member of the Board for their information. In addition to the quarterly financial reports, an annual audit of the fiscal affairs of the Association is secured from a certified public accountant. Copies of the financial statements and a copy of the audit were attached to his report as Exhibit A and Exhibit B.

Report of the Council

D. C. SEWARD, *Chairman*

Dr. Seward stated that his report was compiled from reports received from the ten local councilors of the Association. He reported that the medical profession of Tennessee, as a whole, was in a very healthy condition as far as professional behavior is concerned. He reported that not a single member of the Association had been called before the full council. The report stated that there had been some misunderstandings at the local level, but these have been settled satisfactorily to all parties concerned.

The report commended the Grievance Committees in the various local societies for the method in which they have handled these misunderstandings.

The report expressed deep appreciation to all of the councilors and the secretaries of the local societies for making the report possible. He stated that it was the first time since he has been serving on the Council that a full and complete report had been received from every councilor of the State.

Dr. Seward then summarized briefly the reports from the various councilors and commended the councilors for their faithful and efficient service to the Association.

The report was concluded with the statement that several local societies in the past year had reduced their number of regular meetings. He called attention to the fact that the local society is the grass root of the Tennessee State Medical Association, which, in turn, is a constituent part of the American Medical Association.

He called for a renewed interest on the part of

local societies in the maintenance of good scientific programs and in the extension of the societies' services to the public.

Report of the Committee on Scientific Work

R. H. KAMPMEIER, M.D., *Chairman*

"The members of the Committee have been responsible for the suggestions and subsequent selections of both the titles and the essayists appearing on the program of the General Scientific sessions of the Association. (The only exceptions are two papers offered spontaneously.) The Committee has continued to feel that by this method of formulating a program the postgraduate functions of the Annual Session can best be furthered.

"In keeping with the suggestion made to the Board of Trustees a year and more ago, the experiment of limiting the Annual Session to the mornings, leaving the afternoons free for the specialty groups has been continued. This has seemed to offer the only solution to the maintenance of the Annual Session in the face of the rapid growth of specialty groups and their natural desire to discuss their special problems in separate meetings. Furthermore this type of program offers the members of the Association a wide selection of subjects.

"As Chairman, I wish to thank the members of the Committee on Scientific Work for their constant interest and cooperation in the preparation of the program."

Report of the Hospital Committee

J. L. HAMILTON, M.D., *Chairman*

The brief report stated that the only matter that had come to the attention of the Committee during the past year was the situation at Murfreesboro. The Chairman was unable to attend the meeting, but the Committee was represented by a Nashville member, Dr. David Gotwald. The report stated that there had been no action taken with respect to the Murfreesboro situation and that it remained the same as when called to the attention of the Committee.

Report of the Legislative and Public Policy Committee

C. M. HAMILTON, M.D., *Chairman*

The report showed an unusual year of activity in legislation, both at the State and National levels. Dr. Hamilton reviewed the efforts of the Committee during the last session of the legislature, stating that all of the bills which were detailed in his report that were actively opposed by the Committee were withdrawn, defeated, or died in the hands of the steering committee.

The legislative matters of interest to the Committee and the Association which had the Committee's endorsement were enacted into law.

From the National legislative standpoint the report reviewed the results of a conference held in

Atlanta in January and sponsored by the American Medical Association. There were thirteen items on the agenda of this meeting, and the positions of the American Medical Association and representatives of the respective State Associations attending the meeting were discussed.

The Chairman expressed appreciation to the Association's legal counsel, Mr. Charles Cornelius, to Dr. R. H. Hutcheson, Commissioner of Public Health, and to the headquarters staff which assisted the Committee during the year on all matters for which its services were desired.

Report of the Liaison Committee to the Public Health Department

(Due to the illness of Dr. Manier, Chairman of the Committee, the report was read by the Executive Secretary.)

"Relations between the Department of Public Health and this Association has continued this year on a high plane of cooperation and mutual good will. No problems have arisen which even necessitated the Committee's holding a meeting.

"This Association is vitally interested in all phases of the operation of the State Department of Public Health. The Public Health Council, whose appointment by the Governor is made upon nominations of this House, is the policy-making body of the Health Department. Dr. R. H. Hutcheson, its distinguished Commissioner and Secretary, is due our thanks for his cooperation with organized medicine and for his excellent administration of the Health Department.

"Your Committee stands ready at all times to advise and consult with the Commissioner and his staff to the end that the Department will render even better service. Dr. Hutcheson, in turn, has expressed his deep appreciation for the cooperation and assistance of the Tennessee State Medical Association."

Report of the Insurance Committee

The Committee did not present a report to the House of Delegates during the regular session, but it is understood that the Chairman will file a report for review by the Board of Trustees.

Reports of the Memoirs Committee

HENRY DOUGLASS, M.D., *Chairman*

"As I have sat among you and heard the various Chairmen called on to report, there comes a better appreciation of the differences between the functions of the Memoirs Committee and all others. We shall never lack data for our annual report, one which will not be preliminary or tentative in character but always final.

"During the calendar year 1953, thirty-nine members of the Tennessee State Medical Association died. Their names follow:

(See following note.)

"The lamentable toll which a single brief year exacted of us is too heavy for individual consid-

eration. This solemn moment of finality gives us pause, not in awe of death, but for a better appreciation of life.

"Certainly we know that, in the aggregate, these physicians have contributed to the general progress of medical science. This is much to their credit.

"In the many difficult decisions that must have been theirs to make they were guided by a high code of ethics which is generally known and appreciated throughout the world as being traditional among physicians. This made you a privileged class.

"Above and beyond this, they contributed immeasurably to the happiness of peoples by virtue of an indefinable quality of the spirit, may I say human touch, which in the hour of realization when neither science nor high intent can fulfill men's hope, maintains confidence, inspires understanding and appreciation to cushion the shock.

"This is the nearest in life we may come to the human soul or to an understanding of the source from which Medicine draws her strength."

Following the above remarks, Dr. Douglass read a list comprised of thirty-nine deceased members, following which the House of Delegates stood in a moment of silence showing their respect for the memory of these physicians.

Report of the Committee on Postgraduate Instructions

FRANK WHITACRE, M.D., *Chairman*

The report summarized the recent postgraduate course in Internal Medicine and Circulatory Diseases, which was conducted by Dr. John F. Dee and completed in July, 1953.

Total registration for the course over the State was 1,056.

The report stated that the second course in Obstetrics opened in September, 1953, and that the teaching centers in Western Tennessee have already had the courses. At the time of the report the course was in progress in the Middle Tennessee area.

The report paid a high tribute to Dr. Charles A. Behney of Philadelphia, the instructor for the present course.

Appreciation was expressed for the continued financial assistance given the postgraduate program by the two medical colleges,—Vanderbilt University and the University of Tennessee,—the Tennessee State Department of Public Health, and the Tennessee State Medical Association.

Report of the Committee on Cancer

C. H. HEACOCK, M.D., *Chairman*

The report summarized the results of a project in cancer which was begun in May, 1950, and completed in March, 1954.

The courses, consisting of four hours of formal instructions, were held in Columbia, Clarksville, Union City, Jackson, Millington, Johnson City,

Oak Ridge, Cookeville, Murfreesboro, and Cleveland, with a total of 354 physicians in attendance.

The lecturers were Dr. Maus W. Stearns, Jr., of Cornell University, and Dr. Sam A. Wilkins, Jr., of Emory University.

The funds which were used to finance the course were donated by the American Cancer Society and the Tennessee Department of Public Health. The Committee reported that it had now exhausted all available funds for this particular postgraduate course in Cancer.

Report of the Committee on General Practice

C. B. ROBERTS, M.D., Sparta

The Committee devoted all of its work and energies during the past year to instituting and conducting a new type of postgraduate course sponsored primarily by the Tennessee Academy of General Practice.

The report stated that it is now possible for any general practitioner in the State to attend only three of the six or more accredited postgraduate courses offered each year in the State in order to secure the necessary number of formal hours of training as required by the American Academy of General Practice.

The report stated that the subject matter presented in the various courses gave the general practitioner a broad selection.

Dr. Roberts commented that the success of the Tennessee experiment was so satisfactory that the pattern has now spread over twenty-four other states and that the same will be repeated in Tennessee in the future, with a one-day course on "Common Problems in Clinical Medicine."

This series of lectures is scheduled for Knoxville beginning on June 3rd.

The report was concluded by stating that there are now five local chapters of general practitioners located in Nashville, Knoxville, Memphis, Chattanooga, and the Washington-Carter-Unicoi Medical Society area.

The report also cited the publication of the *Tennessee GP*, which is being issued quarterly to the entire membership of the Tennessee State Medical Association. The *Tennessee GP* is the only full sized general practice journal published by any state academy in the United States.

Report of the Committee on Emergency Medical Service

JAMES E. WILSON, M.D., *Chairman*

The report stated that the main function of this Committee was to concern itself with the problems of civil defense as related to physicians composing the Tennessee State Medical Association.

The report described a series of lectures which were sponsored by the Committee and which were given in fifteen teaching centers throughout the State. Those invited to attend the lectures were physicians, dentists, osteopaths, nurses, pharmacists, hospital administrators, and veterinarians.

Wide publicity through the headquarters office was given these courses. From a standpoint of attendance, the lectures could only be regarded as partially successful. Despite the relatively small attendance, however, the Committee feels that the series of lectures was worthwhile and played an important part in acquainting health personnel with their duties in the event of an atomic attack.

Report of the Committee on Industrial Health

OTIS S. WARR, M.D., *Chairman*

The Chairman of the Committee attended the meeting of the Council on Industrial Health in Louisville, Kentucky. This was sponsored by the American Medical Association and the State Association of Industrial Health Committees.

Many ideas were obtained that will be adaptable to problems in Tennessee. The Committee will soon meet to discuss these matters.

Report of the Prepaid Insurance Committee

N. S. SHOFNER, M.D., *Chairman*

The full Committee had not had a meeting during the past year, but the Executive Sub-Committee composed of Dr. Daugh W. Smith, Dr. R. H. Kampmeier, Dr. John R. Glover, Mr. Charles L. Cornelius, Sr., and Dr. Shofner, as Chairman, were required to meet frequently, along with Mr. V. O. Foster, for handling administrative problems, making recommendations on allowances for unlisted procedures, and adjudicating disputes and misunderstandings.

The report stated that the revision of the Tennessee Plan completed last November was an important milepost in the Prepaid Insurance Program. Essential aspects of the revision were:

1. Raising the maximum benefit from \$175 to \$200.
2. Eliminating as many inequities in the fee schedule as possible.
3. Enlisting underwriters to "go along" with the revision.
4. Securing new Participating Agreements from physicians.
5. Conducting a promotional and informational campaign to the profession and the public on the new Plan.
6. Raising the income limits for full service for insured families from \$3,600 to \$4,200 per year. The income limit for single persons remains the same as under the old Plan, namely, \$2,400 per year.

The report stated that the Committee believes that the time has now come for expanding the benefits of the Tennessee Plan, so as to include physician services in medical illness, therapeutic radiological services, anesthesiology, and pathology.

Dr. Shofner parenthetically reviewed a meeting of the Executive Sub-Committee along with representatives of the internists, radiologists, and anesthesiologists, which was held on Saturday, April

17th, immediately preceding the first session of the House of Delegates.

He reported that these groups who had been appointed as study committees to make recommendations with respect to these additional services had proposed adding benefits to the Tennessee Plan in these specialty fields. He stated that these study committees would be retained and that the Executive Committee would continue its studies with respect to the advisability of expanding the Tennessee Plan to include these specialty services.

The report revealed that excellent cooperation from physicians, underwriters, and the public has been secured and that not a single misunderstanding or problem, whether involving physicians, underwriters, or insured patients, remains unsolved.

The present stature of the Tennessee Plan was indicated by the following figures: The Plan now has 1,700 participating physicians, thirty-five approved underwriters, both commercial and non-profit, and 650,000 Tennesseans insured under the Plan.

The Committee report recommended that participating physicians be relieved of the obligation of accepting the Tennessee Plan allowance as full pay when the patient insured under the Plan holds one or more additional policies covering the same condition. (This recommendation was supported by a resolution adopted by the House of Delegates in a later session.)

The Committee stated that it had concerned itself with the problem of totally inadequate "cat and dog" policies that are being sold in Tennessee by certain companies, but that it was powerless to do anything about this situation because of present laws regulating insurance in Tennessee.

The Committee feels that the answer to inadequate insurance is to push the Tennessee Plan. The report stated that already two out of every three surgical contracts held in Tennessee are now Tennessee Plan contracts.

Rapid growth of the Tennessee Plan was indicated by the statement that during 1953 enrollment jumped from 400,000 to 650,000—one of the greatest years.

The report solicited the continued cooperation of the physicians in Tennessee with the Association's most important activity in the field of medical economics.

Report of the Public Service Committee

(Report in full published in Public Service Section, this issue.)

Report of the Liaison Committee to the UMWA

B. M. OVERHOLT, M.D., *Chairman*

The Committee during the past year had concerned itself with the problems in medical practice in coal mining areas in Tennessee. These problems were listed in the Committee report as being:

1. Unnecessary and prolonged hospitalization.

2. The incidence of needless surgery.

3. The general costs of medical care.

The report stated that these problems were not peculiar to Tennessee, but were widespread throughout the bituminous coal area.

The attention of the Committee was called to these problems following the publication of the report of a special A.M.A. survey team last year.

The report stated that the practices innumeraed above are confined to a minor percentage of the medical profession in Tennessee, but despite this fact, as long as these problems exist, the Committee will concern itself with them.

The Committee was originally created by the Tennessee State Medical Association for the purpose of receiving grievances from all parties concerned with reference to the administration of the UMWA Health and Welfare Fund, which pays for certain medical services to eligible miners.

The Committee recommended that standards which will improve the quality of medical care for the beneficiaries of the UMWA Health and Welfare Fund be established and that these standards become the basis for judging the availability, the quality, and the cost of medical care rendered by physicians under this program.

The Committee stated that it will concern itself not only with the practices of physicians participating in the program, but that it will also review practices established by the administrators of the Fund to the end that there shall not be unfair exploitation of the funds by physicians and that adequate medical care of a high quality at reasonable cost be provided for the beneficiaries of the fund.

Report of the Advisory Committee to the Woman's Auxiliary

CLYDE CROSWELL, M.D., *Chairman*

"The Advisory Council of the Woman's Auxiliary to the Tennessee State Medical Association has been happy to serve in this capacity under the able leadership of Mrs. H. David Hickey, Auxiliary President. Although we have not been called on frequently, we have stood ready to cooperate with the Auxiliary at all times. We have been vitally interested in the Health Project and appreciate the work the Auxiliary has accomplished during the past year."

Report of the Committee on Veterans Affairs

H. H. SHOULDERS, M.D., *Chairman*

The report reviewed the history of the present position of the American Medical Association with respect to hospital and medical services for veterans. This position was described, in effect, as being that free service in VA hospitals to veterans suffering from acute non-service-connected disabilities be discontinued and that the responsibility for the care of such veterans revert to the individual and to the community in which he lives.

The A.M.A. position was described as recom-

mending that this form of benefit to these veterans be abolished by action of the Congress. The report stated that it had been the position of the Tennessee State Medical Association that it would be impossible to secure the enactment of such legislation by the Congress and that the effort to do so would put American medicine in a bad position with political leaders, with veterans, and with a large segment of the public.

The report then described the efforts of the Tennessee State Medical Association to secure the adoption of "The Tennessee Plan" by the House of Delegates of the American Medical Association. The Tennessee Plan was described as providing the following significant solution to the problem:

1. That the Government pay the premium cost of medical and hospital insurance coverage for those veterans who are unable to pay for such costs, and that this coverage apply to medical and surgical cases and not to mental, T.B., or chronic illnesses of over ninety days.

The report stated that many conferences had been held in local communities throughout Tennessee, and that the response to the Tennessee Plan had been gratifying. These conferences began before the present position of the A.M.A. had been taken in New York, and were discontinued in order to give the Committee time to evaluate the response of the public, veterans, and the Congress to the present A.M.A. position.

The Committee stated that it has now become apparent that the policy adopted by the A.M.A. has no chance of being enacted into law; that this action was not only futile, but harmful.

Following this decision the Committee met in February of 1954 for the purpose of considering future action with respect to "The Tennessee Plan." The Committee decided to press again for the adoption of The Tennessee Plan by the House of Delegates of the A.M.A. The Committee decided also to inform the various officers, executive secretaries, and other administrative personnel of the various state societies of their action and that the support of the various states be solicited for The Tennessee Plan.

The report stated that many requests for additional copies of literature describing The Tennessee Plan have been received following an original mailing to some 3,500 key personnel throughout state medical societies.

The report was concluded by requesting approval of these several actions by the Committee and a request for authority and funds to carry the program forward as described in the report. It expressed the hope that the policy adopted by this Association will be adopted this year as the basic policy of the A.M.A. with respect to hospital and medical services for veterans with non-service connected disabilities.

Report of the Committee on Rural Health

WILLIAM N. COOK, M.D., Chairman

The report stated that it was the plan of the

Committee to improve rural health by working through and cooperating with other agencies already established in Tennessee with a primary interest in health. These agencies include some 900 community improvement associations, the Agricultural Extension Service of the University of Tennessee, local medical societies, the Health Department, and some 300 Agriculture Extension agents.

The Committee reported that as a result of the conference in Knoxville a plan for cooperative work with the Agricultural Extension Service and the medical profession has been worked out. The key person in this cooperative program will be a specially trained member of the staff of the Extension Service of the University of Tennessee who will coordinate the interests of many organizations, including the Tennessee State Medical Association in the overall problem of rural health. The special consultant will work primarily with farm organization leaders, with local community organizations interested in rural health, and with the members of the Rural Health Committee of the Tennessee State Medical Association.

The Committee stated that this organized approach to the problems of rural health will be taken in any community which wants it when it is found not to be in conflict with any other major organization and where the medical profession will cooperate with the program.

The Committee called upon physicians through their local medical societies to cooperate with bona fide health agencies in their communities, rendering professional and consultant advice and stimulating these organizations in a constructive program.

The Committee expressed the hope that there should eventually be established a rural health committee in every component medical society of the Association and that these committees, in turn, would become a major consultant and advisory group to the various organizations interested in improving rural health throughout the state.

Report of the Grievance Committee

RALPH H. MONGER, M.D., Chairman

Dr. Monger tendered a verbal report stating that only one grievance had been referred to the State Grievance Committee during the past year and that was adjusted satisfactorily to all concerned.

He commended the Grievance Committees of the local medical societies who have apparently satisfactorily handled all disputes and misunderstandings that have arisen during the past year between physicians and patients.

Report of the Committee on Blood Banks

MERLIN L. TRUMBULL, M.D., Chairman

The main function performed by the Committee during the past year was to watch the trend in blood banking as it affects the physicians in Tennessee. The important role of transfusion services in Civil Defense was cited, and the re-

port called for additional supplies of transfusion equipment and blood derivatives.

The shortage of State and Federal funds has resulted in what is regarded as totally inadequate equipment for any Civil Defense emergency. The report cited the increasingly greater difficulty which the Red Cross is having in meeting its civilian obligation.

With the cessation of the Korean War public response to appeal from the American Red Cross has greatly lessened. Because of the general shortage of blood and blood derivatives and as a result of action taken by the American Medical Association last June, a series of conferences between representatives of the American Medical Association, the American National Red Cross, the American Association of Blood Banks, the American Society of Clinical Pathologists, and the American Hospital Association have been held. The purpose of these conferences has been to devise ways and means of developing a blood program which would adequately meet the needs of both the Armed Forces and the civilian population.

At the present time, plans growing out of these conferences have been developed, at least to the paper stage, which are acceptable to the three medical groups. No plans, however, have had the wholehearted and unqualified acceptance of the five groups interested in the problem.

Blood is now being regarded as a National asset, and the need for conservation was stressed in the report. Certain abuses were cited which deplete present inadequate supplies, and in order to stimulate a program of conservation, the Committee made the following recommendations:

1. That physicians ordering transfusions continue to concern themselves with their proper role for encouraging recipients to make replacements to their own blood bank.
2. Conserve our blood supply by the intelligent use of the product.
3. Keep a watchful eye on trends in blood banking, especially to keep the control of this medical function in the hands of medical groups.

Report of the Committee on Physical Therapy

GEORGE W. SHELTON, M.D., *Chairman*

During the past year the Committee concerned itself with the provisions of a bill introduced in the last legislature providing for the licensing and regulation of physical therapists. The Committee, after reviewing the proposed legislation decided that there were no objectionable features and that the bill should be supported by the Physical Therapy Committee.

Contacts with the Physical Therapy Association, Tennessee Chapter, have been made by the Committee, and the Committee has been informed that the bill sponsored by the physical therapists

will be introduced at the next session of the Tennessee legislature.

Report of the Liaison Committee to the Department of Public Welfare

R. H. KAMPMEIER, M.D., *Chairman*

The report gave an historical review of the development of the Committee and of the circumstances surrounding the medical aspects of the Public Welfare Department which were amenable to medical consultation and advice.

The report stated that even prior to the establishment of this Committee through the use of medical advice, the Department was able to save approximately \$3 million dollars in 1952 as compared with the expenditures of 1950.

With the new responsibility of administering a program of payments to the permanently disabled, a new field of consultation for the Committee has been established.

At the urgent request of the Commissioner of the Department of Public Welfare, the Association has now established the Committee on a permanent basis. Future services of the Committee will be in the nature of consultation and advice to the Department of Public Welfare, with respect to the medical problems involved in the administration of the Department's program.

Report of the Committee on Tuberculosis

CARL A. HARTUNG, M.D., *Chairman*

The Committee stated that no problems had been referred to it during the past year and no action had been taken by the Committee.

Report of the Committee on Mental Health

MYRTLE LEE SMITH, M.D., *Chairman*

A conference between the Committee and with the Board of Mental Health of the State of Tennessee was reported, at which time general agreement was reached upon supporting a proposed new law which would change the method of commitment of mentally ill patients from a criminal basis to a medical method.

The report cited also a series of conferences on the subject of a proposed sterilization law which might become a part of a preventive program in the field of mental health. Cases of reproduction of the mentally unfit were cited as being a major cause for continually growing problems in the field of mental health and of juvenile delinquency, as well as dependency of parents.

The Committee feels that some attention should be given to the problem of establishing the system of juvenile judges on such a basis as to assure judicial personnel with at least minimum training in the field of juvenile psychology and juvenile delinquency.

The Committee stated that its future role would be to serve as a liaison between physicians of Tennessee and the Mental Health Department of the State of Tennessee.

Report of the Autopsy Committee

LELAND M. JOHNSTON, M.D., *Chairman*

The report described a series of conferences between the Committee and a similar committee from the Association of Funeral Directors. The result of these conferences was that a "Code of Ethics" for autopsies was drawn up, and with minor changes, has been approved by the Committee and by the Tennessee Association of Funeral Directors, the Tennessee Society of Pathologists, and the Tennessee Hospital Association.

The Committee submitted a copy of this Code of Ethics for approval by the House of Delegates. Now that this Code of Ethics has been drawn and has been accepted by the agencies concerned, the Committee requested that it be dissolved since it had performed the function for which it was created.

Report of the Health Project Contest Committee

MRS. S. J. SULLIVAN, *Chairman*

Because of authorization of the House of Delegates at the preceding session, the Committee changed its program for the past year from a health essay contest to a health project contest, which substituted action for words. The report described the interest which was taken in the contest throughout the State and stated that such action projects have resulted in advancement in better understanding of health and has become an important adjunct to health education in schools.

The report cited lack of local medical society interest and support in some of the counties where the contest was participated in by local schools. Participation in the contest was cited as follows: East Tennessee submitted seven county projects, with 621 students participating. No project participation was reported from Middle Tennessee. West Tennessee reported four counties participating, with about 240 students involved. These statistical figures, however, were incomplete at the time of the report.

The Committee recommends that two sub-chairmen be appointed to provide closer contact with the local medical societies and the public schools in future years.

Report on the Liaison to Organized Labor

DAUGH W. SMITH, M.D.

The Committee, authorized a year ago by the House of Delegates, has moved rapidly into a series of conferences designed to promote mutual understanding between the medical profession and organized labor on such essential aspects of medical care as its availability, its quality, and its cost. With the formation of the Association's Committee, the following groups of organized labor immediately formed liaison committees to meet and work with your Committee:

The American Federation of Labor
The United Mine Workers of America
The Congress of Industrial Organizations

The Big Four Brotherhood of Railway Trainmen.

The first conference held between your Committee and these organizations was attended by twenty-one people, including representatives from the above-named organizations, the Tennessee State Medical Association, and the Tennessee Medical Foundation.

Representatives of organized labor expressed their feelings freely and during the "hair down" session, many misunderstandings were eliminated and the real problems were attacked.

Organized labor would like to have broader coverage of medical costs through insurance. The so-called "package plan" is appealing to them, and full coverage is desired certainly for all working people with incomes below \$3,000 per year.

The UMWA Welfare and Retirement Fund representative stated that 97.2 per cent of all the Fund's expenditures went for direct services to the people. They desired a medical care rider attached to the Tennessee Plan, which would make it possible for the Fund to secure the services of many additional participating physicians.

Representatives of the Tennessee State Medical Association stated that the solution of medical care problems, the prepayment of such services through insurance, and the availability of quality medical care was the responsibility of the three groups represented here—namely, organized labor, the insurance industry, and organized medicine.

Labor representatives, obviously surprised and pleased that doctors were willing to meet and discuss such problems, indicated their desire for continued sessions and promised to bring specific problems in the field of health to the Association's attention. This they have done.

Subsequent meetings have revealed the need for an expansion of the coverage of the Tennessee Plan, particularly including medical care services, X-ray therapy, and anesthesia. (House of Delegates approved such expansion, plus pathology.)

The Committee cited the fact that up until a few years ago the front page of almost every issue of the four labor papers in Tennessee carried articles which were critical of the medical profession. While this trend has not disappeared, the Committee stated that it certainly is not as prominent as it has been in the past. On the contrary, there have been stories and editorials in Labor papers praising organized medicine in Tennessee for its efforts toward a realistic approach to Labor's medical care problems. The Committee predicts future and successful meetings in which these problems will not only be discussed, but solutions found within the framework of American freedom and democracy.

Report of the Legal Liaison Committee

GEORGE K. CARPENTER, M.D.

While this Committee was appointed only two

months ago, it has already held an important session with representatives of the Tennessee Bar Association. The meeting held on April 4, 1954, was attended by the full Legal Liaison Committee, the full committee from the Bar Association, and officials of both Associations.

In a friendly fashion, both groups moved rapidly into some of the infrequent problems that result in friction in the court-physician-attorney relationship. These problems were pinpointed as follows:

1. The unwillingness of some physicians to testify in court,
2. The failure of some physicians to provide attorneys with medical reports,
3. Giving medical reports to unauthorized persons, and
4. Charging excessive fees in some instances for depositions and court attendance.

By way of explanation and not evasion, medical representatives stated that

1. Some physicians are "scared to death" of courts and attorneys,
2. Opposing counsel often tries to secure unauthorized reports,

3. The loss of professional time in court attendance often exceeds attendance fees, and
4. Some physicians lack necessary clerical help for the preparation of prompt reports.

The conference ended with the statement that these problems and others of mutual interest can best be handled through cooperation and education. The group went on record as favoring future conferences and set up specific points of cooperation which includes an exchange of articles for the Journals of both Associations, the sponsoring jointly of regional seminars on medico-legal subjects by local Medical Societies and local Bar Associations, the exchange of speakers, between local Societies on medico-legal questions, and that both Associations undertake an educational program on this subject for its members through the various media available to them.

The Committee expressed its intention of continuing conferences with the Bar Association.

At the conclusion of the report, the Chairman introduced a resolution which authorized the continuance of the Committee and of its function as originally outlined. This resolution occurs on page 190 of this issue of the JOURNAL.

Minutes of the Annual Meeting of the Board of Trustees of the Tennessee State Medical Association April 21, 1954 — 9:00 a.m. — Parlor C-2 Maxwell House, Nashville, Tennessee

The Board held its regular annual meeting with the following members present:

Dr. James C. Gardner, Chairman

Dr. A. M. Patterson

Dr. Carrol C. Turner

Dr. R. N. Buchanan, Jr.

Dr. Wm. J. Sheridan

Others present were:

President John R. Thompson, Jr.

President-Elect Charles C. Trabue, IV

Editor R. H. Kampmeier

Jack E. Ballentine, Executive Secretary-Elect

Ed L. Bridges, Public Service Director

V. O. Foster, Executive Secretary

The Executive Secretary presented a financial report covering a statement of receipts and expenses for the first quarter of the 1954 fiscal year. After thorough discussion of the report, the report was accepted. A copy of this report is attached to these minutes as Exhibit A.

The Executive Secretary then submitted a copy of the audit for the year 1953 as prepared by the firm of Osborn & Page. After careful examination of the audit statement, it was regularly moved, seconded, and carried that the audit be accepted.

Dr. Kampmeier reported the relative success for this meeting in the securing of cooperation from the specialty groups that had been invited to meet concurrently with the Association. He reported that the Eye, Ear, Nose, and Throat section had also voted to meet concurrently with the Association next year. The Board reaffirmed its policy of inviting specialty groups to meet in conjunction with the State Medical Association in the future.

Following a brief discussion of previous studies on a retirement program for employees of the Association, it was decided that the matter would receive further study

and that the Chairman would appoint a committee to work with Mr. Cornelius, our Legal Counsel, and with physicians from Nashville to work out a program. It was further moved, seconded, and carried that Mr. Ballentine and Mr. Bridges be made members of this Committee and that the Committee report to the Board at its semi-annual meeting next fall and to furnish the Board with copies of their studies and recommendations before the meeting.

The Board then went into the matter of appointing members to the various committees whose terms have expired. They also made appointments of various committees which were created by action of the House at this meeting. All committee appointments are reflected in the current issue of the Journal of the Tennessee State Medical Association. This list of new committeemen constitutes Exhibit B of this report.

At this point the Chairman interrupted the order of the day to hear a special report from the Woman's Auxiliary by Mrs. C. B. Roberts of Sparta. Mrs. Roberts related the need of the Woman's Auxiliary for additional funds in order to balance a proposed budget. Mrs. Roberts gave a detailed statement of the plans for the Woman's Auxiliary, and upon motion by Dr. Patterson and seconded by Dr. Turner, the Executive Secretary was authorized and instructed to provide \$1,000 as financial assistance for the Woman's Auxiliary from the regular budget.

The matter of creating a special liaison committee to the Public Health Council for setting up regulations governing the operation of the Hospital Indigency Act was discussed. Upon motion duly made and seconded, Dr. Gardner, as Chairman, along with Drs. Trabue and Edwards, are to recommend the members of this liaison committee, with the names to be submitted to the Board of Trustees by mail for confirmation.

The Board then considered the amount of money which should be appropriated for the specific use of the Committee on Veterans Affairs, chairmanned by Dr. Shoulters. After thorough discussion, it was duly moved, seconded, and carried that

\$500 be appropriated for the Veterans Affairs Committee for the operational year April 1954 until April 1955, to be used for printing, postage, and other incidental expenses, exclusive of travel expense.

The bookkeeping system of the Headquarters Office was discussed at length, and upon motion duly made, seconded, and carried, the Executive Secretary was authorized and instructed to secure a modern bookkeeping and auditing system for the Association. He was directed to obtain the advice of the auditing firm in setting up the system.

The Board then went into executive session, and following its deliberations it was reported by the Chairman that a motion had been introduced, seconded, and carried which would provide an increase of salary of \$50 per month for Mr. Ed L. Bridges, Public Service Director, effective May 1, 1954.

The Board then considered appointments to a special committee which was to study methods of expanding the membership of the Association in keeping with the resolution adopted by the House of Delegates on Tuesday. Following discussion it was moved, seconded, and carried that this Committee be composed of the following members:

President John R. Thompson, Jr., Chairman

President-Elect Charles C. Trabue, IV

Vice President Walter Hankins for East Tennessee

J. Fred Terry for Middle Tennessee

S. Fred Strain for West Tennessee

Secretary-Editor R. H. Kampmeier

James C. Gardner, Chairman of the Board of Trustees

D. C. Seward, Chairman of the Council

The meeting was adjourned at 1:45 p.m.

V. O. FOSTER

Executive Secretary

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Minutes of the Annual Meeting of the Council

The Annual Meeting of the Council was held April 18, 1954. A quorum was present, with Doctors Cecil Newell, Leland Johnston, Arthur Porter, J. Paul Baird, H. L.

Monroe, Henry T. Kirby-Smith and D. C. Seward.

The Chairman of the Council, Dr. Seward, called the meeting to order and called for the election of officers in the Council for 1954, and Dr. Douglas Seward was nominated to the office of Chairman of the Council by Dr. Monroe. The nominations were closed by a unanimous vote, re-electing Dr. Seward as Chairman.

The office of Secretary was the next election in order of business. Dr. Leland Johnston nominated Dr. Paul Baird as Secretary of the Council. Dr. Kirby-Smith moved that the nominations be closed, which was voted upon unanimously and Dr. Baird was elected Secretary.

There was no official action taken by the Council upon any question of medical ethics, misdemeanors or complaints. Unofficially, Dr. Seward reviewed the Smith County Medical Society complaint in the

case of their charge of breach of contract against two of its members, and it was decided that this was purely a local civil action and that unless the case was originally appealed to the Council that this body would not rule upon this matter.

It was also suggested in the general discussion that the Chairman of the Council obtain some ruling from the Legal advisor of The Tennessee State Medical Association as to whether an action can be placed before the Council prior to an action taken by a local society. This was put in the form of a motion by Dr. Johnston and seconded by Dr. Kirby-Smith and voted upon as a matter of action for the Chairman to take.

There was no further business, and the meeting was adjourned.

Signed:

D. C. SEWARD, M.D., Chairman

J. PAUL BAIRD, M.D., Secretary

CLINICOPATHOLOGIC CONFERENCE

Nashville General Hospital, Nashville, Tenn.

Weil's Disease

The patient, a 58 year old white, male, truck farmer, was admitted to the hospital on April 15, 1951, because of "sore muscles and jaundice." He died 7 days later.

The patient had apparently been in good health until about 8 days before admission when he noticed "soreness" of the muscles of his legs to the extent that he had to quit work. Other muscle groups apparently were not "sore." A day later the patient noticed chilly sensations, and for the next three days he felt that he "ran a high fever" with chills. With the onset of the fever the patient developed severe generalized headache. The day before admission the patient noticed for the first time that he was jaundiced.

Three weeks before admission the patient developed a non-productive cough which increased during the 8 days before admission. He denied dark urine, clay colored stools, and contact with other people with jaundice. The patient admitted to "heavy" intake of alcohol at regular intervals.

Ten years prior to this admission the patient was hospitalized and treated for bronchopneumonia. Family history was not remarkable.

Physical Examination revealed a thin, moderately icteric, male whose sensorium was moderately cloudy but who was basically oriented. BP was 105/60, P 110, R. 26 and T. 98 F.

Over the skin, which was moderately icteric, were a number of small petechial hemorrhages measuring about 2 mm. in diameter. These seemed to be concentrated over the trunk. The sclerae were markedly icteric, the ocular fundi were not remarkable. The mucous membranes of the oropharynx and nares were markedly injected. There was a small well circumscribed dark red hemorrhage 3 mm. in diameter on the mucous membrane surface of the lower lip. The neck was not rigid and no venous distension was noted.

The heart was not remarkable; a few coarse rales were audible over an area at the left posterior lung base. In the abdomen a mass was felt extending from the right upper quadrant to below the umbilicus (an over-all dullness of 18 cm.). This mass was moderately tender, firm, and thought by the examiners to be liver. The spleen and kidneys were not palpable. The prostate was enlarged firm and nodular, but not hard. No feces was present in the rectum. The extremities were not remarkable. Neurological examination showed only absence of the patellar and achilles reflexes.

Laboratory Studies. Urinalysis: dark amber color; sp. gr. 1.017; alb. 2+; sugar neg.; micro—

occ. RBC, 5 to 10 WBC; urobilinogen, "negative in indiluted specimen." Blood: (April 15) WBC 21,200, Hgb. 9.8 Gm., PCV 29; corrected sed. rate 25 mm.; differential count—segs. 67%, stabs 14%, juveniles 8%, lymphs. 11%. (April 18.) WBC 33,250; differential—segs. 77%, stabs 6%, juveniles 13%, lymphs. 3%, baso. 1%; 4 nucleated RBC per 100 RBC; PCV—28%. On April 21 eosinophile count, direct was 218 per cmm.

Blood Chemistry: (April 15) prothrombin time 100% of normal; acid phosphatase 2.9; alkaline phosphatase 16.6; NPN 102 mg.%; cholesterol 144 mg.%; thymol turbidity 39 units. (April 16) thymol turbidity 55 units; alkaline phosphatase 15 King-Armstrong units; total serum proteins 5.8 Gm.%, Alb. 3.1 Gm., Glob. 2.7 Gm.; total serum bilirubin 78 mg.%, direct 41 mg.%, indirect 37 mg.%; icteric index 121 units; NPN 144 mg.%. (April 20) NPN 223 mg.%; cephalin flocculation—3+, 24 hrs., 3+, 48 hrs. (April 23) NPN 278 mg.%, thymol turbidity 43 units. (April 15) Serology: Kahn negative. Spinal fluid not cloudy but slightly xanthochromic; Wassermann neg., cells 62 per cmm.; 100% polys; (RBC not recorded); chloride 610 mg.%; protein 49 mg.%; bilirubin 0%. On April 20 the fluid was cloudy and xanthochromic; cells WBC 350 per cu.mm., 100% polys; RBC 20,000 cu.mm.; sugar 75 mg.%; chlorides 680 mg.%; protein 156 mg.%.
X-Ray Studies: Chest film showed the "heart and diaphragms to be negative. There was no consolidation made out in either lung field; there is no evidence of pneumonia."

Hospital Course: The patient was placed on brewer's yeast, choline and a high carbohydrate diet. Twenty hours after admission he was considerably worse. The total urinary output in this time (24 hours) had been 20 cc. He was placed on a fluid intake of about 1,200 cc. daily and started on Aureomycin 250 mg. every 4 hours. He rapidly became disoriented and then semi-comatose. Aureomycin dosage was changed to 500 mg. intravenously every 12 hours; penicillin was also given, 200,000 units every 6 hours. The downhill course was rapid and persistent. On the fifth hospital day the patient's blood pressure was found to be 60/40 and the pulse about 80 per min. He was started on Cortisone (Cortone) 125 mg. every 8 hours. There was no improvement, and the patient's course continued rapidly downward, expiring quietly on the seventh hospital day. Temperature during the hospital stay was within normal limits. Urinary output during the latter days ranged between 100 cc. to 200 cc. per 24 hour period.

DR. R. H. KAMPMEIER: In the presentation of a CPC one can take up the discussion or approach the diagnostic problem in one of three ways. If the protocol does not lead to a clear-cut disease syndrome, I like to take up the symptoms and signs on the basis of systems and see what they might

mean individually from a pathological viewpoint, and try to fit them together to make up a clinical syndrome. Another approach, if the protocol suggests several diseases, is to take up each disease, analyze it in light of the protocol and then pick the disease which seems most likely. The third method is applicable when one is faced with a protocol in which a disease seems to suggest itself immediately as one reads it. Then one starts with a primary diagnosis, and considers other likely possibilities. Today I am going to adopt this plan and decide upon a primary diagnosis first for, as I consider this protocol as a whole, I can arrive for the moment at only one diagnosis.

The first and important thing here is that the patient had a systemic disease. This man was suddenly taken ill with certain symptoms indicative of systemic infection. He had been perfectly well until eight days before admission. The onset was rather dramatic and there were several things about which he complained immediately. First, there were severe muscle pains related to his legs. Secondly, he had chilliness, then chills and fever, and a severe headache. Since these symptoms are encountered so very commonly in acute infectious processes, we will have to look further and see what additional symptoms or observations might help us in deciding upon a specific infection. The additional items are the jaundice, and then the appearance of petechiae in the skin and some bleeding from the mucous membranes.

Next one turns to some special tests for more information. The man very definitely had renal involvement. He had albuminuria. This might have been merely the "febrile albuminuria" of acute infection. But, in addition he had azotemia,—a progressive azotemia. This leads one to suspect that the albuminuria was more than a febrile one. The patient had jaundice and in addition evidence of derangement of liver function as shown by tests. He had a leukocytosis which may be of assistance in evaluating his acute infectious process which is characterized by jaundice, by nephritis and by hepatitis. In addition he had evidence of meningeal involvement. He had a severe

headache, but headache is a part of any acute infection as any of us who have ever had the "flu" can attest. But the spinal fluid showed some interesting findings. There was an increase in protein, an increase in cells, and then he had another thing which is very, very significant, and which gives us a good lead,—the spinal fluid was xanthochromic. The meninges as a rule act as a barrier to the passage of bile and blood pigment and thus the presence of a xanthochromic spinal fluid is something with which we have to reckon.

Taking the clinical events and laboratory findings into consideration, I can arrive only at one diagnosis,—that of Weil's disease, or leptospirosis due to the *Leptospira icterohemorrhagiae*. I feel the whole clinical picture as presented in this protocol fits in very well with that diagnosis. This probably calls for a few more remarks because I am sure that the diagnosis, if this is the correct one, isn't always so easy. As a matter of fact I wonder whether there may be something hidden here and that I am wrong, since it looks a little bit too easy. Nevertheless, it is a disease with which we have to reckon in Nashville and certainly in this hospital. Some few years ago Doctors Cowden, Isham and Ownby* wrote up a nice clinical review of some four cases which had appeared here in a relatively short period of time.

Among the patients coming to this hospital are some from certain areas in the city where they are exposed to infection with the *L. icterohemorrhagiae* because of the rat population and the possible contamination of food, water, etc. This man was a truck grower and I can well understand how he might be working in fields with wet soil contaminated with rat urine, the rat being the carrier for this organism. Abrasions on the skin offer the probable portal of entry. While attending the meeting of the Puerto Rico Medical Association in December, I heard the professor of medicine, Dr. Diaz-Rivera, at the school in San

*Cowden, F. E., Ownby, F. D., and Isham, R. L.: Weil's Disease: Report of Four Cases Emphasizing Two Adjuncts to Early Diagnosis, *Am. Pract. & Digest Treat.* 3:353, 1952.

Juan give a paper which illustrates the mode of infection and incubation period. In a prison break, 30 to 40 prisoners escaped to hide out in adjacent sugar cane fields which were wet with water standing on the ground. All no doubt lay on the ground, dodging the guards for a matter of some 48 hours or so before they finally were caught. A high percentage of them developed Weil's disease, and thus offered an opportunity to study the whole lot of them. The exposure time was fixed to the time out of the prison since there was no disease in the prison population. The fugitives were all exposed to the dampness of the sugar cane fields.

The course of events in Weil's disease is pretty well illustrated in our patient, working in an environment offering infection, he developed at about the proper time certain symptoms one after the other. As the organism is disseminated throughout the body, systemic manifestations develop. The chills and fever and then the manifestations of renal and hepatic involvement, as well as of meningeal reaction, are well shown in this man. The muscle pains characteristically are specific in this disease. You probably all know of Sheldon's work at Emory University in which he showed a typical lesion in the muscle which is diagnostic and which, incidentally, was utilized by Cowden, Isham and Ownby in their paper of a couple of years ago. They demonstrated these lesions in the gastrocnemius muscle by biopsy.

The patient had mental cloudiness though he was oriented as shown by the protocol. The nephritis and hepatitis were maintained. The patient showed a course which indicated that the disease was likely to be fatal; there was progressive evidence of renal failure with albuminuria and azotemia. From this standpoint the patient certainly had a rather typical picture. I have mentioned the significance of xanthochromia in a person who is jaundiced; there are very few circumstances under which this will happen. It means increased meningeal permeability due to an inflammatory reaction permitting bile pigment in the spinal fluid. Yellow spinal fluid is emphasized as being an important diagnostic finding in

Weil's disease. The cell count in this patient's spinal fluid is somewhat unusual in the type of cell found. According to the literature, though a polymorphonuclear type of response may occur, it is uncommonly 100 per cent as in this man. Of the four cases reported from this hospital several year's ago, one had more than 50 per cent of polys, one had 100 per cent lymphocytes and the others showed a majority of the cells to be lymphocytes. Nevertheless since it is reported in the literature that as high as 90 per cent of the cells may be polys, I'm not going to let the 100 per cent count disturb me. Whenever we find polys in the spinal fluid unexpectedly, we must always consider the severity of the reaction which may alter the anticipated lymphocytic type of response in a given case.

Though I have committed myself insofar as the diagnosis is concerned, I should point out that all cases of leptospirosis are not always diagnosed as easily. I came away from Puerto Rico with a definite feeling that we have probably overlooked instances of this disease at this hospital. The *non-icteric type* may be encountered in as high as 30 to 40 per cent of cases, something of which I was not conscious. I have a definite feeling that if we have picked up a number of icteric cases of Weil's disease we must have overlooked some non-icteric ones, those having a less severe infection or reaction than illustrated by our case for today. I have a notion that some of our patients, who have had an acute febrile illness, with an apparent nephritis or an albuminuria, may well have been patients having Weil's disease without the evidences of the accompanying hepatitis.

If we would forget the icterus for the moment and just think of these patients with their chills, fever, headache and aching in the muscles, we might very readily pass these cases off as influenza. Because most of us have experienced this syndrome with the "flu," we must include in the diagnosis of influenza-like diseases on our wards, leptospirosis, particularly if there is a "febrile albuminuria." We will need to investigate them further for the possibility that we are dealing with Weil's disease with nephritic type of involvement. Another acute disease

to be considered in differentiation at times is Eastern spotted fever of the type indigenous here, presenting an acute onset of a febrile disease with muscular pain and with a petechial rash. (In our case of Weil's disease the petechiae were probably related to the jaundice.) So too murine typhus at the onset might need to be differentiated from the non-icteric Weil's disease. Here we have to rely upon the course of the disease, the rash and the presence or absence of the agglutination for the *Proteus* organism to help in the differential diagnosis. Weil's disease might masquerade as brucellosis I suppose, at times, because of the acute onset and the generalized aching, headache, fever, chills, etc. However, in brucellosis there is not the acute hepatic involvement that we have in the disease under discussion, nor is there a nephritic aspect. But in mild cases of the non-icteric type I imagine one might consider the diagnosis of brucellosis. Because of the severe muscular aching with some fever one might think of trichiniasis at times in evaluating the muscle pains so typical of Weil's disease. Having seen a fair amount of trichiniasis I would say that high fevers are unusual. Secondly, edema of the eyelids is very characteristic in trichiniasis. Eosinophilia may not help in the immediate diagnosis, for this can be delayed as long as 3 to 4 weeks. Trichiniasis produces no hepatitis nor nephritis, but since we are talking about the more minor non-icteric types of Weil's disease, one can readily see that the differentiation may not be so simple.

When we come to the diseases associated with icterus, and consider the acute infectious processes there really aren't many one can bring up for discussion. The first which comes to mind I am sure ran through the minds of all of you who looked at this protocol,—namely, infectious hepatitis. Here was an individual who had symptoms of acute infection and then developed jaundice. In this particular instance the diagnosis would not be entertained very long if the protocol as a whole is considered. In the first place the muscular pains must have been quite dramatic in this man since they forced him to stop his work,—these are not

the pains of infectious hepatitis. All of us are well aware of the aching which persons with infectious hepatitis have, particularly the arthralgias. (Acute rheumatic fever has been considered at times in individuals who turn out to have infectious hepatitis.) Thus, though I am perfectly aware of the arthralgias of infectious hepatitis and also of the non-icteric form of the disease, the muscle pain in this patient is very outstanding and atypical for infectious hepatitis. This case for today lacks something which is expected in infectious hepatitis, namely, gastro-intestinal symptoms. I would anticipate nausea, vomiting, and possible diarrhea with the fever and the general systemic symptoms of infectious hepatitis. The laboratory work is very helpful in the differential diagnosis. The liver function tests do not help, and even the rising NPN later on in the course of the disease does not aid in differentiating Weil's disease from infectious hepatitis. But the high leukocytosis with a shift to the left as occurred in this case is unexpected in infectious hepatitis. This man also had nephritis which is not anticipated in infectious hepatitis.

In the differentiation of Weil's disease from surgical diseases, one is hard put to suggest an acute process in the biliary tract which would explain the clinical picture associated with jaundice. This is not obstructive jaundice; certain other findings do not go with a surgical type of jaundice,—the nephritis and the severe muscle pains. Abdominal symptoms, or pain, or gastro-intestinal symptoms would be expected with almost any type of jaundice which might be on a so-called surgical basis.

In summary, I have decided to make the diagnosis of *Weil's disease* on this case for the reasons which I have given.

DR. CHARLES THORNE: Would you care to comment on the absence of fever, for he had none during the hospital course?

DR. KAMPMEIER: I took the protocol at its face value. The man probably had fever; he said he had a high fever and chills; I was willing to take the statement of having fever. Fever may subside in a matter of 7 or 8 days in Weil's disease,—at about the time the patient came in. Sometimes the fever may extend to as long as ten days,

even if the patient is to recover. As I understand it death occurs more commonly from the nephritic type of picture which we have in this case. Progressive albuminuria has a bad outlook in so far as the ultimate ending is concerned. I might bring up one other thing. Later on in the course of this man's illness, he developed hypotension and it was thought, I take it, by those who were attending him that he might have had some accident related to his adrenal glands,—that he had hypo-adrenalism. I note that Cortisone was used, no doubt with this in mind. A hemorrhage in the adrenal gland might be a possibility in this type of disease and might account for the lack of a febrile reaction in the later stages. We do not know enough about the case to commit ourselves as to whether or not he had an accident to his adrenal cortex. I would think he probably had sufficient cause in his nephritis and rising NPN to account for his death.

DR. CRAFTON: Can you say that this patient was more likely to die because he had jaundice?

DR. KAMPMEIER: I doubt that this is correct. Patients with the non-icteric type do die and they die a nephritic type of death. What the difference is in mortality rates as between the icteric and the non-icteric I cannot say. I believe the rate is higher in the icteric group. As I recall the tables of the Puerto Rican studies, the non-icteric cases had lower mortality rate than in the icteric group.

DR. THORNE: Would you wish to comment on the possibility of thrombotic thrombocytopenic purpura as an etiological factor in this case?

DR. KAMPMEIER: The important diagnostic item in this particular patient is the xanthochromic spinal fluid, a thing which is not encountered in an individual who is jaundiced unless there is an inflammatory reaction. If you raised the question in a non-icteric case, it might not be as simple but the non-icteric ones have less of the symptoms of meningeal involvement. The xanthochromia and the absence of bleeding other than petechiae are clearly against the condition you mentioned.

DR. FRED GOLDNER: Might the degree of anemia indicate any underlying hepatic disease such as cirrhosis, in addition to the acute process?

DR. KAMPMEIER: The question of anemia in this patient and its probable relationship to underlying disease, such as possible cirrhosis in a man known to have used alcohol regularly in the past is a good question. It is quite difficult to say whether he might have developed anemia to approximately 10 grams in the short period of this acute infection. I'll agree that this would be unusual, but it might occur. You have raised another point, whether or not, if this man had some degree of cirrhosis to begin with, he would be more subject to a poor prognosis if he developed Weil's disease. We have no evidence for cirrhosis. He did not have a small liver and there is no information pointing to a Laennec's cirrhosis before his final illness. If he had had previous hepatic disease I feel sure that he would be in a much more precarious condition when he developed Weil's disease.

Does anyone else have other suggestions or is there anything else we ought to consider?

The mortality rate is in the neighborhood of some 5 to 10 per cent. Of the four cases reported by Cowden from this hospital one only died. Weil's disease is the old term that includes four strains of leptospira. In this Country the *L. icterohaemorrhagiae* is one and *L. canicola* is the other. In other parts of the world there are two other strains and in the discussions of the paper which I heard in Puerto Rico there was much arguing about the immune and cross immunological relationships between these strains. When penicillin first came out, it was used apparently with some efficacy, though difficult of evaluation since the fever drops in 4 to 6 days. More recently Aureomycin apparently is the drug of choice in treating these cases and that comes to your attention in this protocol. This man was given Aureomycin. Of course that doesn't make the diagnosis since antibiotics are used for everything with fever these days.

DR. GOLDNER: Is arsenic still being used in the treatment of this disease?

DR. KAMPMEIER: Arsenic was used in the past, but it's pretty hard to evaluate the effect of any drug because the clinical course is rather short lived after the patient falls under the doctor's observation.

I have had the opportunity of seeing some of the patients with leptospirosis in this hospital in the past because samples of blood and urine have gone through my hands for the darkfield examination for the leptospira. I have seen the organism in the blood. Darkfield examination on blood is quite difficult. I have never seen demonstrated leptospira in the urine. I have seen them also on darkfield study in the blood of guinea pigs infected with the organism. Guinea pig inoculation with blood or urine, other than muscle biopsy, is probably the best diagnostic maneuver one can carry out. Agglutination tests are very specific and may reach surprisingly high titers. Special set-ups for this are available only in few laboratories.

If there are no other questions or comments we will let the pathologist tell us about this case and also, I hope, emphasize the muscle biopsy as a diagnostic feature.

DR. CHARLES JUDD: Thank you, Dr. Kampmeier. There are a couple of additions to the clinical part of the record which I would like to add. The first is that on the ninth day of illness, about a day after admission to the hospital, the blood was examined under darkfield microscopy and it did reveal definite *L. icterohaemorrhagiae*. The organisms could not be demonstrated in the urine at that time, however. Subsequent to that biopsies were done on the gastrocnemius muscle on two occasions, the first on the day of admission, which was the eighth day of illness, and the second on the fourteenth day of illness. The first of these was negative; the second showed the characteristic changes seen in this disease, namely, focal proliferation of the nuclei of the sarcolemma and necrotic muscle fibers with slight vacuolization. (Figs. 1 and 2.)

At autopsy the body was that of an elderly white man. The sclera and skin were intensely jaundiced. There was a slight amount of straw colored fluid in the peritoneal cavity and the abdominal viscera were markedly icteric. The heart weighed 340 grams, the myocardium was somewhat flabby and the chambers, especially the right ven-

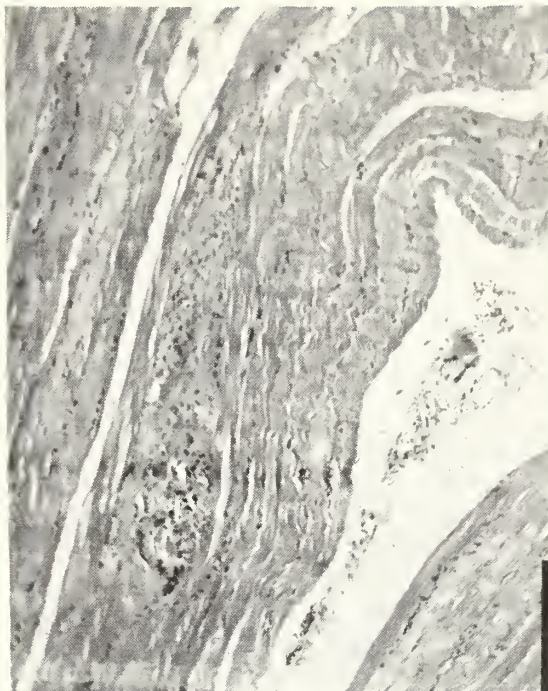


FIG. 1. Biopsy of gastrocnemius muscle taken on thirteenth day of illness showing focal necrotic lesions involving isolated muscle fibers and small groups of vessels (x85). (By courtesy of Dr. Cowden et al. and permission of Am. Pract. & Digest Treat., J. B. Lippincott Co.)



FIG. 2. High power view of one of the advanced necrotic lesions in Fig. 1. Note that two adjacent muscle bundles are involved, with loss of cellular detail and moderate sarcolemmal proliferation. Note absence of inflammatory cellular reaction (x475). (By courtesy of Dr. Cowden et al. and permission of Am. Pract. & Digest Treat., J. B. Lippincott Co.)

tricle, were dilated. The mitral valve was moderately thickened and there was some coronary atherosclerosis and atheromatous involvement of the aorta. The right lung weighed 560 and the left 440 grams. The cut surfaces were dark gray and bloody material could be expressed with slight pressure. The smaller bronchi showed some mucopurulent exudate. The liver was quite enlarged and weighed 1,950 grams; cut surfaces were dark brown and the lobular architecture was distinctly visible. The spleen was atrophic and weighed 40 grams; there was some congestion in the pulp. The gastric mucosa showed several erosions on the lesser curvature about 8 cm. proximal to the pylorus. The largest was 0.7 cm. in diameter. The distal half of the small bowel and most of the large bowel showed submucosal petechial hemorrhages. The right kidney weighed 250 and the left 280 grams. The surfaces were smooth and cut section showed the usual cortical medullary architecture with some congestion and edema. Petechial hemorrhages were seen in the submucosa of the bladder. The brain weighed 1,500 grams; the spinal fluid was clear and the meninges free of blood or exudate.

Microscopically the heart showed some slight diffuse fibrosis but no actual necrosis; there was some edema. In the lungs, some of the bronchi contained mucopurulent exudate. The capillaries within the alveolar walls were engorged, and the alveoli contained a considerable amount of fluid in which desquamated epithelial cells and a few monocytes were suspended. The liver revealed marked edema. The Kupffer cells were prominent and many of the hepatic cells were somewhat depleted of glycogen. There was some disruption of the cords of liver cells. Some of the portal areas showed more infiltration than usual with lymphocytes. The spleen revealed engorged sinusoids. One section of the adrenal showed some necrosis in the cortex. Sections of the stomach, from the ulcerating lesion revealed acute necrosis which had caused sloughing of all of the mucosa. In the kidney the glomerular capillaries and pyramidal veins were moderately engorged. There was edema of the interstitial tissue and infiltration of lymphocytes and monocytes. The epithelium of the convoluted tubules was swollen and granular. The brain showed general diffuse edema and

engorgement of capillaries. Special stains by Levaditi's method of the liver and kidney failed to reveal leptospira.

DR. KAMPMEIER: You said that he did have some bleeding from a gastric ulcer, a sloughing area. Would you guess that he had had bleeding from this area? Coming back to the question of blood loss, here was an unanticipated possible source or cause of blood loss which may explain all or a portion of the anemia. It is always worthwhile calling attention to items like this, which we had no reason to suspect, unless we had evidence of blood loss by stool examination.

DR. JUDD: The ulcerating lesion in the stomach was an acute one with sloughing of most of the mucosa and it certainly is conceivable that it could have caused a degree of bleeding with blood loss. I would say that it was fairly recent, possibly antedating the admission to the hospital by one or two days, but not much more.

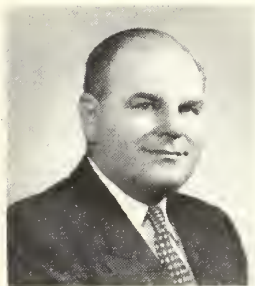
DR. KAMPMEIER: The question has been raised whether the lesion might have been of the type of sloughing one encounters in persons dying in uremia.

DR. JUDD: That is a possibility.

DR. KAMPMEIER: Another question I would like to raise is for emphasis. What is the specificity of the muscle biopsy in diagnosis; in other words, is there any other type of lesion in skeletal muscle which might be confused with this one?

DR. JUDD: A combination of both the sarcolemma cell proliferation and the necrosis of the muscle fibers with vacuolization is typical, and exclusively typical, of Weil's disease as contrasted with trichiniasis and some of the other conditions of myositis.

President's Letter



DR. THOMPSON

I desire to call your attention to the report of the committee on Veterans Affairs of the Tennessee State Medical Association, which was presented to the House of Delegates at the recent meeting in Nashville, and published elsewhere

in this issue of the Journal. I commend it to you for further study.

The time is at hand to accentuate the positive in this matter of medical care for indigent veterans. Regardless of our action, we can rest assured that the Congress of these United States can and will take positive action. We are well aware of the fact that those who are entrusted to make the laws of the land are aware of the special regard the majority of the population holds for veterans, and will see that this segment of our population is properly cared for. How this will be done then becomes our special concern.

We feel sure that Congress will welcome a positive approach to the questions we have outlined in the Tennessee Plan. This

is further pointed out by the inclusion of the Tennessee Plan as part of the testimony by the committee on Veterans Affairs of the new Congress, in spite of the fact that no member of the medical profession presented it to the committee. The committee obviously recognized its merits.

The printed material furnished to the AMA mailing list of (3,400) county societies and officers has met with unexpected response. Requests for additional materials are coming in daily. Several state associations are considering the various points of the Tennessee Plan.

Your committee plans a series of grass root meetings in all the congressional districts of the state of Tennessee in June and July so that those vitally interested, such as the following: physicians, veterans, public officials, hospital administrators, and candidates for Congress may have the opportunity to become acquainted with this positive approach to a most difficult problem.

The decisions and activities of the committee on Veterans Affairs of the Tennessee State Medical Association deserve the cooperation and support of every member of this association.

A handwritten signature in dark ink, appearing to read "John Thompson", with a long, sweeping horizontal line extending to the right.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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MAY, 1954

EDITORIAL

THE ANNUAL 1954 SESSION

Another Annual Session, the 119th, of the Tennessee State Medical Association has passed. In general it may be said that it was a successful session.

The House of Delegates transacted its business with dispatch. Actions having to do with the affairs of the Association have been well summarized by the Executive Secretary in this issue.

As Chairman of the Committee on Scientific Work your Editor finds himself quite well satisfied with the program. It presented the first "full-dress" combined program,—scientific sessions of the State Association and of the specialty groups. This offered a remarkable variety of subject material for the physicians attending the Session. Sixty-six different titles appeared on the program. From the attendance at the afternoon sessions it would appear that not only did the members of the specialty groups attend their respective sessions but they also attended other special programs.

As has been indicated previously on these pages this plan, if it can be continued, will

hold the State Association together and yet permit the specialty groups to meet with their fellow specialists to pursue matters of common interest. Withal it offers better postgraduate instruction than meetings of the past. When some of the mechanical details involved in scheduling multiple meetings are smoothed out by experience, it may be predicted that this type of Annual Session is here to stay.

Last year, the first year of this experiment, four special groups changed to afternoon programs. This year eight organizations joined in the plan. The Tennessee Academy of Ophthalmology and Otolaryngology has voted to cooperate in like manner in 1955. We hope that the Tennessee State Orthopedic Society will also join in making this a unanimous cooperative effort.

The Committee on Scientific Work pledges itself to give thought to making the General Session interesting and instructive for 1955.

R. H. K.



PUBLIC HEALTH AND POPULATION GROWTHS

Several months ago your editor, while visiting Puerto Rico, was told some facts by medical friends which were astounding, though on second thought might well be anticipated. Hand in hand with a population of over 2 million, and a population density of 644 per square mile (U. S. population density 43 per square mile), it is alleged that slightly over half the population is age 25 years or less. This remarkable situation has been brought about by medicine. In the face of a high birth rate, public health measures and preventive medicine have so reduced mortality rates that this remarkable percentage of youth has accumulated on the Island. With a continued high birth rate, healthful environment and the resulting increase in life expectancy which is certain to occur, the future economic problems of the Island will be almost insoluble. Emigration (to this Country) and industrialization are only partial answers.

These facts are related not only to Puerto Rico but to the world as a whole and provide the subject for an interesting recent

review* It deals with the problem of feeding a world population of 2.4 billion and growing each year by 25 million. Is this a medical problem? Many would answer in the negative. Yet one author blames it all on the medical profession, physicians having "set the stage for disaster, and like Pilate, wash their hands of the consequences."

The Englishman Malthus 250 years ago considered the world food supply and population growths. He designated the preventive checks to keep a population from growing as late marriage, continence and a desire to have a high standard of living. The positive checks he listed among others, "disease, war, plague and famine." He anticipated the continued growth of populations and could see an answer only by purposeful control of reproduction.

In the last several decades two schools of thought have carried on a battle of arguments. One school "whistles in the dark" by saying that with the improved methods of agriculture and thereby increased food production per acre, even the limited arable land of the Earth will support growing populations indefinitely. They even call attention to the limitless supply of foodstuffs in the plankton of the sea. The other school, as do the authors, face the scientific facts that if the world population increases at the rate of 25 million mouths to feed annually an end must come some day to the available food supply. The problem is not so simple as to take total population and total acreage and speak of food potentials. What of social, economic and national factors! Just because we in the United States with a population density of 43 per square mile are piling up butter, eggs and wheat in excess of demand does not mean it will be available to India or Japan with population densities of 292 and 579 per square mile respectively.

The authors classify world population as follows. (1) Relatively balanced (stationary)—as in the United States, the United Kingdom, France and the Scandinavian countries. In these countries with 20 per

cent of the world population there are relatively low birth and death rates, 15 and 10 respectively. (2) Transitional (expanding)—as in eastern Europe, Russia, Japan, Brazil and Argentina. With another 20 per cent of the world population these countries have controlled death rates and are beginning to control births,—15-20 and 25 respectively. (3) Preindustrial (high potential)—as in Asia (except Russia and Japan), Africa (except white South Africa). With 60 per cent of the world population death and birth rates are high,—30+ and 35+ respectively. It is in these last countries that public health measures, as in the control of infectious diseases, create great problems. In India when a slight decline in death rates occurred between 1921 and 1941 population increased by 83 million.

These studies in demography account for the new thinking which those interested in public health are showing in the subject of birth control. It is a logical transition. With the tools available in preventive medicine for the control of infectious diseases and nutritional diseases, the death rates are declining. The ecologic effect is more mouths to feed. Then the question obviously arises, What can be done about it. The *relatively balanced* countries have limited the size of their families by choice.

The authors discuss at length the need of studies of over-population in given areas and the need for preventive medicine in this field to go hand in hand with control of the infectious diseases. They point out the difficulties of the control of births which involves individual interest and intelligence as against the prolongation of life through measures which usually come through government. However, even partial effectiveness of control measures can reduce the birth rate markedly. Consideration is given to varied cheap methods of contraception and the "safe period" and their relationship to customs of population and religious taboos. The review emphasizes the need for mass education of the peoples of some portions of the world in these methods. Beginnings have been made in areas in India.

The review is of interest at least in setting forth some of the new thinking in the field of public health and preventive medi-

*Gordon, J. E., Wyon, J. B., and Ingalls, T. H.: Public Health as a Demographic Influence, Am. J. M. Sc., 227:326, 1954.

cine. The medical profession has an indirect interest here, for it is the agent that is throwing Nature off balance by the control of disease with resultant lowering of death rates and extending life expectancy.

R. H. K.

★

ERRATUM

Editorial—47:173 (April) 1954. "... 0.1 cc. per pound ..." should read "... 0.01 cc. per pound ..."

DEATHS

Dr. George R. McSwain, Paris, died April 29 following an illness of four years. A member of the American College of Surgeons, he operated the McSwain Clinic prior to his death. Aged 63.

Dr. L. C. Hix, LaFayette, died April 6, 1954 at his home. Aged 77.

Dr. William Alfred Carter, Rogersville, died April 7, 1954 in a Greeneville hospital from a heart attack. Aged 73.

Dr. J. L. Raulston, veteran physician of Richard City, died April 1, 1954 in a Knoxville hospital. Father of Dr. Joseph L. Raulston, Jr. of Knoxville, and Dr. John W. Raulston of the USAMC, he practiced in his home community for 49 years. Aged 76.

Dr. Henry M. Carr, Harriman, after more than fifty years of practice, died March 22, 1954 in a Chattanooga hospital. Aged 79.

Dr. John C. Clark, Memphis, who practiced more than fifty years before retiring several years ago due to ill health, died April 1, 1954 at his home. Aged 78.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis and Shelby County Medical Society

The Society met on March 2 to hear the following program:—"Further Observations on Deafness Caused by Otosclerosis" by Dr. Charles K. Lewis; "Advances in Diabetes Mellitus," by Dr. Jean M. Hawkes; and "Tinea Capitis in Memphis," by Dr. Max H. Cohen.

★

Roane County Medical Society

At its meeting of April 23 at the Oak

Ridge Hospital, the program consisted of a "Symposium on Embolic Manifestations, from Medical and Surgical Aspects." Doctors John D. DePersio, Ralph Kniseley, Dana W. Nance and Samuel Root constituted the panel.

★

Knoxville Academy of Medicine

Dr. G. G. Henson presented a paper on "Psychogenic Hypertension, Paroxysmal Auricular Tachycardia and Fibrillation with Case Report" at the meeting of the Academy on April 13.

★

Nashville Academy of Medicine and Davidson County Medical Society

The members of the Academy were guests of Dr. O. S. Hauk, Superintendent of Central State Hospital, at a dinner meeting on April 13 at the institution. Dr. Cyril J. Ruilmann, Commissioner of Mental Health spoke on "The Large Psychiatric Hospital as a Medical Asset to the Community."

MEDICAL NEWS IN TENNESSEE

The University of Tennessee College of Medicine

A postgraduate program in obstetrics and gynecology for Mid-South physicians will be offered on May 19, 20, and 21 at the John Gaston Hospital. The program will include lectures, demonstrations and ward rounds. The course will be limited to 20 physicians.

★

Dr. C. R. Houck, of the Department of Physiology has been awarded a grant of \$7,980 by the American Heart Association for continuation of studies of hypertension and anemia in bilaterally nephrectomized dogs.

★

Dr. Anna D. Dulaney, of the Division of Pathology and Bacteriology has been awarded a research grant of \$7,398 by the National Cancer Institute of the U. S. Public Health Service.

★

The Memphis and Shelby County Medical

Society adopted a resolution commending the Family Care Program of the College of Medicine following a report of a special committee of the society which made a survey of the program.



Memorial Hospital of Clarksville

The Board of Trustees of the Memorial Hospital of Clarksville announced a dedication ceremony for the opening of the new hospital on April 11.

PERSONAL NEWS

Dr. Joel J. White, Knoxville, medical director of St. Mary's Hospital, has accepted a position as medical director and administrator of the Duval Medical Center, in Jacksonville, Florida, effective about May 1.

Dr. W. H. Young, 82-year-old Montgomery County physician still in active practice with 61 year's record, was honored by the citizens of the Kirkwood Community for his life of service as a typical "country doctor" last month.

Dr. Henry M. Carr, Harriman, suffered a broken hip last month while a patient in a Chattanooga rest home.

Dr. Lucian W. Trent, Knoxville, addressed the regular meeting of the Greene County Medical Society last month.

Dr. S. S. Marchbanks, Chattanooga, and director of the Chattanooga Tumor Clinic, spoke on "Cancer Research" recently over a Chattanooga radio station.

Dr. W. Powell Huteherson, Chattanooga, chair-manned a round-table discussion on "Prolonged Labor" at a meeting of the American Academy of Obstetrics and Gynecology meeting in Oklahoma City recently.

Dr. John L. Dallas, Knoxville, and flight surgeon stationed in Iceland, has been promoted to captain.

Dr. Richard H. Barriek began the practice of medicine at Cross Plains on April 1.

Dr. E. L. Mooneyham, Rock Island, in honor of his long life of service to his community, was awarded the first Annual Veterans of Foreign Wars Citizenship Award by the Warren County Memorial Post.

Dr. Henry Farrar, Jr., formerly of Nashville, has joined the staff of the VanHooser Clinic at Smithville.

Dr. Arch Y. Smith III, formerly associated with the Earl Campbell Clinic in Chattanooga, is now associated with Dr. J. O. Walker in Franklin.

Dr. George Inge, Knoxville, president of the Knoxville Academy of Medicine, addressed a

large group of Knox County Junior and Senior high school girls on "Nursing as a Career" recently.

Five White County physicians have leased and now operate the White County Hospital at Sparta. They are: **Dr. C. B. Roberts**, president, **Dr. Robert F. Baker**, **Dr. William H. Andrews**, **Dr. Charles A. Mitchell**, and **Dr. Bradley**.

Dr. Howard W. Whitaker, Jr., Savannah, is co-author of a scientific article in the current issue of *Diseases of the Chest*, official Journal of the American College of Chest Physicians.

Dr. George W. Burchfield, Maryville EENT specialist, has discontinued practice for an indefinite period due to ill health.

Dr. John B. Wallace, announces the affiliation of **Dr. Walter H. Stephenson** with the Gallatin Community Hospital as of April 1.

Dr. Edward L. Tarpley, Nashville, after a one-year tour of duty in Korea as internist in 48th Surgical Hospital, 121st Evacuation Hospital, and 541st General Dispensary in Seoul, has returned to private practice at 2118 West End Avenue, Nashville.

BOOK REVIEW

Problems of Aging. Transactions of the Fourteenth Conference. Edited by Nathan W. Shock, New York, 1951. Josiah Macy, Jr., Foundation. 138 pages. Price \$3.00.

A panel of thirty-four professional persons eminent in their special fields of biologic sciences, clinical medicine and sociology held a conference of the Problems of Aging in September, 1951.

The subjects discussed were:—Biology and Medicine; Sociology, Psychology, Education and Religion; Economics, Employment and Welfare; and Medical Services, Hygiene and Housing.

The purpose of the conferences of the Macy Foundation is to bring together persons interested in certain subjects for a free exchange of ideas concerning problems related to the subject. Thus may research and study be given a greater horizon than one of limited perspective so prone to occur in the researches within a given discipline.

In the discussion on Biology and Medicine many interesting items having to do with tissue metabolism, nutrition, and with pathologic and physiologic changes of age were brought out. The next subject deals

with the place of the aging person in society, his reactions to a changing society, one in which less emphasis is on work and responsibility and more on play. This brings up great psychologic problems in the retired oldsters and grave sociologic difficulties in relation to the familial responsibilities.

The section on Economics, Employment and Welfare is of great interest to the physician and should be especially so to the medical educator. It focuses attention, in addition to the problems of employment in the aged, on the high cost of hospitalization, the needless amount given the aged, the adequacy of attention in the home and outpatient clinic for many of the aged. This led to the last discussion on Medical Services, Hygiene and Housing, problems facing the practitioner of medicine daily.

This conference is worthwhile to the physician who, in his everyday practice, needing to advise the aged does some thinking about the magnitude of the problem facing the Nation.

R. H. K.

★

Cure Your Nerves Yourself. Louis E. Bisch, B.A., M.D., Ph.D. New York: Wilfred Funk, Inc., 1953. Price \$3.50.

Dr. Bisch has written this volume for the lay public out of his belief that many individuals with minor emotional problems can solve these problems by themselves. He points out that "despite the flood of information that seems available, hundreds of thousands of persons are still distressed by 'nerves.'" Secondly, he emphasizes that professional psychiatrists are physically unable because of the pressure of work to care for all the people who need their services. Thirdly, he emphasizes that many individuals live in districts where psychiatry is not available. Lastly, he points out that medical care is expensive and that perhaps some people can work out their problems independently of professional help, and thereby spare themselves the expense of professional care.

Dr. Bisch's book is written simply and is very readable. The several chapters run the gamut of minor neurotic and emotional

categories as well as dealing with some of the common problems that people face integrating themselves into the realism of every-day living. Much of the advice given is very sound and it is the feeling of this reviewer that this book may be helpful to the masses of people who have minor adjustment problems. The readability is enhanced by many brief case reports.

Dr. Bisch points out that he does not advocate self-treatment of severe illness, nor does he advocate self-treatment of those problems where organic factors are playing a role. He very aptly points out the dangers of self-medication.

It would seem that an individual reading this book in the hope of finding help should be one who can be completely open-minded about himself and be willing to find new ways of adaptation, discounting old habits of thinking, feeling and reacting which may be doing him a disservice and causing or perpetuating a neurotic adjustment to life.

It is also the feeling of the reviewer that the book deals with neurotic problems in a very light and superficial fashion, which would make the book one not to recommend to the many people who are seriously upset, or those who lack the ability of sincere objectivity which is necessary for self-analysis.

Physicians recommending this book should exercise extreme caution, placing it in the hands only of people capable of intelligent understanding of themselves and their inter-personal relations.

ROBERT M. FOOTE, M.D.

★

PLACEMENT SERVICE

The placement service of The Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 322 Doctors Building, Nashville 3, Tennessee.

★

Locations Wanted

A 26 year old, married, physician, M.D. Tennessee, 1949, draft exempt, desires associate relationship for general practice and general surgery.

LW-46

★

A 54 year old, married physician, Protestant,

graduate University of Minnesota, board certificate in Radiology, desires smaller to medium sized community. Available immediately. LW-50

★

A 34 year old, married physician, Protestant, graduate University of Cincinnati, 1943, priority 4, desires clinic, preferred community 10,000 up, General Practice. Available March 1, 1954.

LW-51

★

A 42 year old, married physician, Roman Catholic, graduate University of Vermont College of Medicine, priority 4, Specialty Urology 100%, desires associate or location in community of 100,000 preferably. Available March or April.

LW-62

★

A 34 year old, married physician, Protestant, graduate University of Tennessee. Previous military service October, 1945-September, 1947. Desires community 15,000-50,000. Specialty, General Surgery. Available either July, 1954, or January, 1955.

LW-63

★

A 29 year old, married physician, Protestant, graduate University of Tennessee, Military status Priority IV in September. Desires general practice in or near large city (100,000 or more). Available immediately.

LW-64

★

A 36 year old, married physician, Roman Catholic, graduate Marquette University, Milwaukee, Wis., draft exempt, Specialty Surgery in middle sized community. Available immediately.

LW-65

★

A 29 year old, married physician, Episcopal, graduate Harvard Medical School, military status, 25 months active duty USAF. Pathologist for a single general hospital of 150-300 beds. Available immediately.

LW-66

★

A 33 year old, married physician, Protestant, graduate University of Illinois, military status, deferred, no previous service. Desires general surgery in community above 20,000. Available immediately.

LW-67

★

A 30 year old, married physician, Protestant. No obligated military service. Graduate of University of Oklahoma, beginning practice in Urology specialty. Community preferred 35,000 to 1,000,000. Available immediately.

LW-68

★

Man and wife team interested in Tennessee practice where service needed, either by themselves, in group practice or associated with older doctor. Man 35, Georgia native, Emory graduate, soon board eligible in OB-GYN; has taken part 1 American Board of Surgery exam. Wife, 33, Maryland graduate, interested surgery. Both

Episcopalians. Prefer 20,000 population upward. Available April 1, after military discharge.

LW-69

★

A 31 year old, married physician, Protestant, at present in U. S. Army until June, Graduate George Washington University, Internal Medicine with specialty in Cardiology. Prefer community 10,000 or over. Available July.

LW-70

★

Married physician, Protestant, graduate University of Tennessee, at present in U. S. Air Force. Desires general practice in or near large city. Available September.

LW-71

★

A 26 year old, married physician, Catholic, graduate Louisiana State University, 1952, priority 4, desires clinic for general practice in community 4-10,000. Available immediately.

LW-73

★

Married physician, 34 year old, Episcopalian, graduate University of Maryland, Board Certificate American Board obstetrics and Gynecology, military status—not eligible—served during World War II. Community preferred 30-60,000. Available late fall or winter 1954.

LW-75

★

A 28 year old, married physician, Protestant graduate University of Tennessee 1949, three years training in general surgery, priority 4, completing residency June 1954, available July 1, 1954. Desires community 20-100,000.

LW-76

★

A 38 year old, married physician, Catholic, priority 4, graduate Hahnemann Medical College, Philadelphia, Pa., GP-Surgery, community preferred, 5-10,000. Available two months after selection of community.

LW-77

★

A 27 year old, married physician, Catholic, priority 4, graduate Loyola University, Chicago, 1952, want locum tenens near Memphis July 1-September 30. General Practice.

LW-78

★

A 31 year old, married physician, Protestant, graduate University of Louisville 1953, priority 4, desires clinic, would consider partnership basis, general practice, community preferred 1500-2500. Available July 1, 1954.

LW-79

★

A 26 year old, single physician, Protestant, graduate University of Tennessee, 1954, priority 4, desires temporary practice between graduation and internship, assistant in general practice. Available March 26, 1954.

LW-80

★

A 32 year old, married physician, Hebrew, graduate University of Iowa College of Medicine, Board Certificate held in Urology, priority 4, desires clinic, assistant or associate, community 25,000-500,000. Available July 1, 1954.

LW-83

A 31 year old, married physician, Catholic, graduate Ohio State University 1947, recently discharged from service, desires general surgery in community 10,000-50,000. Available September 1st. LW-84

★

A 29 year old, married physician, Presbyterian, graduate Tulane University 1951, priority 4, Specialty Pediatrics, desires community 25,000 to 50,000. Available July 1, 1954. LW-85

★

A 29 year old, married physician, three children, Southern Presbyterian, graduate Bowman Gray School of Medicine 1946, inactive Status List. USNR; Lt. (j.g.), MCR, Specialty Internal Medicine. Would consider clinic, assistant or Associate. Community preferred 25,000-50,000. Available June, 1954. LW-86

★

A 28 year old, married physician, Protestant, graduate Emory University School of Medicine, Veteran, previous service 3 years U.S.N.R. Active duty. Desires general practice, clinic, assistant or associate in community 3,000-10,000. Available July 1, 1954. LW-87

★

A 31 year old, married physician, Protestant, graduate Harvard Medical School, eligible for American Board of Surgery, Military status, 5-A, Naval Medical Corps 2 years. General Surgery, desires clinic, community 10,000 or larger. Available August 1st. LW-88

★

A 29 year old, married Protestant, graduate Tulane. At present Army Medical Officer (General). Available February 27. Desires general practice in community 4,000-30,000. LW-89

★

A 31 year old, single physician, Protestant, Priority IV, graduate University of Rochester, Specialty—Pediatrics, community preferred—100,000 up. Available July 1. LW-90

★

A 30 year old, married, physician, Protestant, graduate Washington University School of Medicine, Priority IV, 2 years residency training—internal medicine; 1 year Gastroenterology (all approved). Desires clinic, assistant or associate, community 30,000 or more. Available July 1st. LW-91

★

A 28 year old, married, Christian, graduate Medical College of Virginia. Medical officer from July, 1848, to present time. Board Eligible for Pediatrics, desires clinic, Assistant or Associate in community 30,000 or more. Available July 1st. LW-92

★

A 39 year old, married physician, Protestant, graduate Yale, Board Certificate held in American Board of Surgery, military status—not eligible. Specialty Surgery (incl. fracture surgery), desires

clinic or solo, Associate in community 20,000 to 100,000. LW-93

★

A 32 year old, married physician, Lutheran, graduate Temple Medical School, priority IV, Certified by American Board of Surgery, desires Associate first choice, clinic second, in community 50,000 to 100,000. Available May 1. LW-94

★

A 29 year old, married, physician, Protestant, graduate George Washington University, priority IV, desires general practice in community 3,000-10,000, preferably with open staff hospital. Would consider if in small general practice clinic hospital. Available July 1. LW-96

★

Married, 3 children, Protestant, 29 years old, graduate Washington University, Military status, Class 5-A. Specialty internal medicine. Community 20 to 100,000. Available October, 1955. LW-97

A 42 year old, married physician, Catholic, graduate Tulane, Draft exempt. Specialty Internal Medicine, desires clinic, assistant or associate in community 50,000 or over. Available August, 1954. LW-98

★

A 33 year old, married physician, Episcopal, graduate Columbia University College of Phys. & Surg., Board eligible—Obstetrics-Gynecology, desires small clinic, associate in community over 50,000. Available July 1. LW-99

★

A 33 year old, single physician, Protestant, graduate Faculty of Medicine, McGill University, Montreal, Canada. Priority IV. Medicine and surgery, clinic, assistant or associate in community 5,000-10,000. Available July 15. LW-100

★

A 28 year old, married, Protestant, graduate University of Nebraska, Naval Reserve, community preferred 15,000 to 100,000. Specialty Pediatrics. Clinic, Assistant or Associate. Available July 1. LW-101

★

A 32 year old, married, three children, graduate Vanderbilt University, Certified by American Board of Psychiatry and Neurology. Priority IV. Interested in private, partnership or group practice. LW-102

★

A 31 year old, married physician, Catholic, graduate University of Tennessee, Priority IV, specialty training three years general surgical residency. Community 25,000 or more. Available immediately. LW-103

★

A 36 year old, married, Episcopal, graduate University of Colorado, certified in Ophthalmology. Presently in U. S. Navy. Desires community 20,000-200,000 in East of Middle Tennessee. Available July, 1955. LW-104

★

A 32 year old, single, Episcopalian, graduate Louisiana State University. Desires general practice in community 40,000 to 100,000. Available July 15, 1954.

LW-105

★

A 29 year old, married Protestant, graduate New York Medical College, Priority IV, desires general practice in community 5,000 to 20,000. Clinic, assistant or associate. Available July 1st.

LW-106

★

A 32 year old, married physician, Protestant, graduate Duke University, Priority IV. Would consider clinic, assistant or associate. Desires general practice in community 4,000 to 10,000 preferably East or Middle Tennessee. Available July 1st.

LW-107

★

A 30 year old, married physician, Catholic, graduate Baylor University, Board certificate held in Thoracic Surgery. Desires associate in community 500,000-1,000,000. Available August 1.

LW-108

★

A 32 year old, married physician, graduate University of Illinois, Board eligible in internal medicine, completing period of service in Navy. Prefers clinic. Community greater than 6-8 thousand. Available October.

LW-109

★

A 29 year old, married physician, Lutheran, graduate Johns Hopkins, Board Certificate American Board of Surgery. Now on active duty. Available August 1st. Desires community moderate to large city, population 500,000-up.

LW-110

★

A 36 year old, married physician, Lutheran, graduate University of Virginia, certified by American Board of Surgery. Priority 4, desires clinic, assistant or associate in community 15,000 and over. Available 60 to 90 days notice.

LW-111

★

A 32 year old, married physician, Protestant, graduate University of Michigan, Diplomate American Board of Surgery. Category IV. Would like association in community 20,000 to 150,000. Available immediately.

LW-112

★

A 34 year old, married, 2 children, Protestant, graduate University of Minnesota, presently in Army. Desires general practice in community 5,000 to 25,000. Available October 13.

LW-113

★

A 29 year old, married physician, Protestant, graduate University of Tennessee, Priority IV, Specialty Pediatrics. Community preferred 20,000 or more in clinic, assistant or associate. Available July 1st.

LW-114

A 28 year old, married physician, Catholic, graduate University of Tennessee, Priority 4-A. Desires General Practice with Surgery in community 25,000 or less. Would consider clinic or association. Available 60-day notice.

LW-115

★

A 26 year old graduate University of Tennessee, married, Priority 5-A. Desires general practice partnership or alternate, industrial or salaried position o.k. Community 5,000 to 10,000.

LW-116

★

Physician Wanted

Partially disabled Memphis physician with large general practice and modern facilities desired associate, various financial arrangements possible.

PW-40

★

Draft exempt experimental pathologist needed at Oak Ridge National Laboratory to conduct projects to determine effects of ionizing irradiation and the pathogenesis of disease related to irradiations. Special research skills required.

PW-42

★

Small town of 2,000 population, located in Northwest Tennessee, desires a replacement for doctor leaving for Military Service, approximately January 1, 1954. Practice is of general practice type, with numerous home calls made, busy office practice and long office hours due to the type of population surrounding Greenfield. Any one interested please contact Nathan F. Porter, M.D., at Porter Clinic, Greenfield, Tennessee.

PW-43

★

Rapidly expanding industrial community in Southern East Tennessee desires general practitioner. Population of town, 1,000, population of trade area, 6,000. Community cooperation promised in securing housing and office space. Medical Society cooperation also assured.

PW-44

★

23-bed, privately owned hospital needs General Practitioner with surgical training immediately.

PW-46

★

General Practitioner to replace doctor who will be called into Military Service in the near future. Well established practice in suburban district. Nashville.

PW-48

★

Wanted: An associate in general practice. Various arrangements possible. Nine room clinic, moderately equipped. Some operating facilities. EKG, BMR, and 100 MA X-ray machine. Two three-room apartments or one five-room apartment above office.

PW-49

★

General Practitioner needed for work in the

Paraplegia Section of the Surgical Service of a Tennessee Veterans Administration Hospital.

PW-50



Town of 5,000 population, located in West Tennessee, desires general practitioner. Population of trade area 10,000. Community cooperation promised in securing housing and office space. Wonderful opportunity for a young doctor.

PW-51



Wanted: Physician qualified to do general practice and surgery to take over established practice and 12 bed hospital in Dandridge, Tennessee. Facilities may be either purchased or leased. Ill health required disposal. Write or call Dr. S. D. Sullenberger, Dandridge, Tennessee.

PW-52



Good country practice for one man. Twenty miles to excellent Hospital and medical center. Open staff in the Hospital. Present Practitioner considering specializing. Modern brick clinic with X-ray, well equipped laboratory, two treatment rooms, one bedroom, consultation room, business office and large waiting room. Adequate room for expansion either behind or by adding second story.

PW-53



Staff Positions at most levels available in the Department of Mental Health Hospitals in Ten-

nessee. Opportunities unusually good, maintenance available. Process of building a completely new and integrated mental health program.

PW-54

ANNOUNCEMENTS

Sixth Congress on Obstetrics and Gynecology

The sixth American Congress on Obstetrics and Gynecology will be held at the Palmer House, Chicago, December 13-17, 1954.

It is sponsored by the American Committee on Maternal Welfare, Inc., and the American Academy of Obstetrics and Gynecology. It will bring together the four major groups concerned in the provision of better care for mothers and babies—medicine, nursing, public health and hospital administration. The program will include 27 formal papers, 22 symposia and panels, luncheon discussion groups, and several hundred round-table discussions, covering every phase of maternal and newborn care. Scientific and technical exhibits are also being planned. Information about the meeting may be obtained by writing to the Sixth American Congress on Obstetrics and Gynecology, 116 South Michigan Avenue, Chicago 3, Ill.

(Continued from center spread)

that the House of Delegates authorize the Public Service Committee to request the sixteen nursing education schools in Tennessee to institute, wherever possible, a two-year nursing course. Columbia University is pioneering in this course and will soon graduate 5 classes. There must be some way of turning out the nurses we need for bed-side care. If the House adopts this report, the Committee will immediately begin work seeking the establishment of the two-year nursing course in the hope that we can obtain cooperation of the nursing schools.

In this report, limited to five minutes, we are hitting the highlights of the service rendered by the Committee.

The Committee is composed of L. W. Edwards, M.D., Chairman; Charles C. Trabue IV, M.D., J. O. Manier, M.D., Charles C. Smeltzer, M.D., William A. Garrott, M.D., H. L. Monroe, M.D., Thurman Shipley, M.D., W. C. Chaney, M.D., C. B. Roberts, M.D., Marsh Frere, M.D., M. K. Owen, M.D., W. N. Cook, M.D., John R. Thompson, Jr., M.D., J. Paul Baird, M.D., Harold Boyd, M.D., R. B. Wood, M.D., and John M. Lee, M.D.

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Albert J. Crevello, M.D.

Diplomate, American Board of Psychiatry and Neurology, Inc., Medical Director

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 J. Paul Baird, Dyersburg (1956)
 Estill L. Caudill, Jr., Elizabethton (1957)

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 James C. Gardner, Nashville
 W. C. Dixon, *ex officio*, Nashville
 Joe L. Raulston, Jr., Fountain City
 W. J. Sheridan, Chattanooga
 Frank Moore, Jackson

Industrial Health

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 George Duncan, Nashville (1955)
 Thomas A. Lincoln, Oak Ridge (1957)

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Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

JUNE, 1954

Number 6

The author reviews and emphasizes the methods and procedures available in the diagnosis of gastro-intestinal disease. The most interesting is that of the increasing use of the peritoneoscope and its potentialities in direct inspection of intra-abdominal lesions and the obtaining of biopsy material under direct vision.

DIAGNOSTIC PROCEDURES IN GASTRO-ENTEROLOGY*

WILLIAM J. CARD, M.D.,[†] Nashville, Tenn.

Whether one is interested in surgery, pediatrics, gastro-enterology, or some other phase of clinical medicine, the matter of diagnosis continually confronts him and often demands the utmost in analytical astuteness to arrive at a conclusion relative to the disease process.

The purpose of this presentation is to re-emphasize the importance of certain procedures which are commonly used in gastro-intestinal diagnosis. Further, I wish to discuss some of the less commonly employed, but definitely useful means for diagnosing lesions of the gastro-intestinal tract, means which have been developed in recent years. There are many problems to be solved in the differential diagnosis of gastro-intestinal disease, as for example,—that of bleeding from unknown sites in the gastro-intestinal tract; the differentiation of medical and surgical jaundice; and the etiological factors involved in the two related entities ulcerative colitis and regional enteritis, to name but a few. As efforts continue in the field of clinical investigation it is hoped, however, that problems like these will become fewer and more easily solved.

It is impossible to cover the entire field of gastro-enterology with respect to diagnostic procedures and so, in mentioning a few of the methods of examination, only

those points will be emphasized which may be helpful in examining the patients whom one sees in everyday practice. The techniques and procedures which will be described are the result not only of suggestions from the literature but also of trial and error on my part in private practice and on the Gastro-intestinal Ward of the Medical Service of the U. S. Marine Hospital in New Orleans.

The History

No one can deny the fundamental value of the history. At times too many are guilty of neglecting the details of the primary or chief complaint, not to speak of the associated symptoms and signs. To say that one has pain is not enough; it is important to know the time of onset, duration, and other pertinent characteristics which are inevitably present. *It cannot be stressed too strongly that sufficient time must be set aside for this investigation, for brevity of effort and time often leads to serious error.* It should be emphasized further that not only should the physician be able to interrogate properly but that also he should be a good listener. One practical point which seems to have considerable merit in the solution of diagnostic problems is the review of historical facts with the patient during subsequent visits, and the "jogging" of his memory for additional evidence which should be incorporated in the history and labeled as "addenda," ample space being provided for it in the clinical record.

*Read before the Middle Tennessee Medical Association, November 19, 1953, Murfreesboro.

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This practice has proved invaluable to those who have tried it.

There is no substitute for a good history.

The Physical Examination

The routine physical examination often supplies little information of practical value in gastro-intestinal diagnostic problems. However, there is no excuse for carelessness; negative findings often have the greatest significance.

Two procedures, often neglected or ill-performed, supply considerable information at times. They are the examination of the mouth by palpation and the rectum by digital exploration. Information gained from the odor of the breath may be of great importance, but how many physicians put on a rubber glove and carefully palpate the floor of the mouth and other buccal areas? The implication is obvious. No physical examination is complete without a systematic examination of the anus and rectum. Many of his students often recall the emphasis which Dr. Lucius Burch used to place on the importance of a handy rubber glove which, he indicated, it was advisable to carry sometimes even in the pocket of the tails of formal evening attire!

The physical examination must be comprehensively complete.

Laboratory Procedures

Laboratory methods of definitive diagnostic importance are becoming more numerous and complex. For example, whereas the more sophisticated now may employ specific resins in the determination of gastric acidity, there are still those who must and should use gastric intubation to determine the presence of free hydrochloric acid. A great deal can be learned also from examining microscopically particulate matter in the stool specimen. The small amount of fecal material obtained on digital examination of the rectum is sufficient for the determination of occult blood and microscopic study as well. This simple expediency may often save the patient a large X-ray bill or specialist's fee and thus assure the internist or practitioner his remuneration.

Before leaving laboratory and related

procedures, it is felt that two diagnostic tests should be mentioned:

With the introduction of the Papanicolaou stain there has been a revival of an old method, first used by Rosenbach in 1882, of the study of cells and tissue particles exfoliated by the mucosa of accessible portions of the gastro-intestinal tract. In spite of the fact that some recent reports of cytological study are discouraging, it is felt that refinement of technics will be followed by successful gastro-intestinal cytodagnosis and that this method can become a definite supplement to radiologic and endoscopic diagnostic procedures.¹ The other is the insulin test, which, though it has fallen into disrepute in some circles, is still the simplest method for determining the presence of intact vagal fibers after a vagotomy. It is performed as follows: Fifteen units of unmodified insulin is injected slowly intravenously and a hypoglycemic level of 50 mg. per cent is produced. Then every fifteen minutes for about two hours stomach contents are aspirated and free and total acidities are determined. A positive response consists in a rise of the curve for free acidity in the presence of an adequate hypoglycemia. This indicates that some uncut parasympathetic nerve fibers are still present. The reason for the test falling into disrepute is that a negative response suggests, but does not prove, all vagal fibers to the stomach have been cut. It is suggested that if one will repeat the test using a larger dose of insulin equivocal results may be clarified.²

Radiologic Examinations

Radiological technics are mentioned only in passing because it is felt that the radiologists should undertake this phase of diagnosis. However, tribute should be paid to the sagacity and cunning which they employ to distinguish, for example, a polyp of the colon or rectum from a fecal mass.

Endoscopy

The remainder of this discussion will deal primarily with endoscopic procedures which are even yet undergoing constant revision and improvement. The first of these procedures has remained too long and been placed

erroneously in the domain of the gastro-enterologist as a specialized technic.

Sigmoidoscopy, proctoscopy, anoscopy. The use of the sigmoidoscope, and its shorter brothers the proctoscope and anoscope, can be learned by any physician with a little practice. To use these scopes with ease and thus to add an important method of discovering what is producing pain, bleeding and/or other manifestations of disease in the lower gastro-intestinal segment is extremely valuable. Fancy and expensive instruments have been developed and it is suggested, if one is contemplating adding this type of endoscopy to his diagnostic armamentarium, that he use several, if possible, before purchasing one. If the scope is too complicated or expensive it may discourage its use.

Sigmoidoscopy, proctoscopy and anoscopy are really not difficult. Many practitioners have in their offices a Hanes, Buie or similar mechanical table on which they do minor surgery, but it is not necessary to have even this elaborate equipment to examine the patient satisfactorily. Various positions have been recommended as ideal for placing the patient during this examination; the Sim's position, with the patient on the left side, is preferable when the subject is unable to maintain a more difficult attitude due either to inanition or other serious constitutional debility; and, the knee-chest or knee-shoulder position which is the one most frequently employed.

However, the most successful introduction of the sigmoidoscope for me has been the use of an inverted position (Fig. 1)

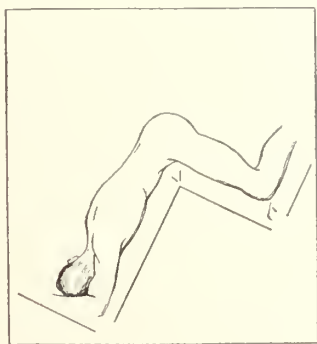


Figure 1.

tude a patient assumes during drainage for bronchiectasis. This position has been no more uncomfortable than the knee-chest attitude to those examined in both positions. With the patient in this attitude it is impossible, because of gravity, for the liquid contents to flood the field and/or the examiner's face. In using it there have been fewer failures to introduce the sigmoidoscope its full length, whereas in the other positions mentioned above not infrequently it has been impossible to pass the sigmoidoscope beyond the recto-sigmoid juncture.

One very helpful small technical detail has been employed, but infrequently, for permitting passage beyond the recto-sigmoid juncture. It is the use of a 25 per cent solution of magnesium sulfate soaked into a cotton swab and applied through the scope to the area of muscular contraction. Following the application of this solution, if one will wait for a matter of some 15 to 20 seconds, it will be possible to pass the scope without a great deal of difficulty beyond the point of muscular contraction.

Another practice which has been followed and which has been most helpful in allowing passage of the scope has been the elimination of cleansing enemata prior to sigmoidoscopy. By simply allowing the patient to empty his lower bowel, one can use the subsequent period of relaxation, which follows the evacuation of the rectum and lower colon, to introduce the scope and thereby avoid the problem of getting by spastic areas. This procedure also permits a true appraisal of the state of the mucosa without its modification by alkali or other chemical substances which may have been used in the cleansing enemata, as well as doing away with the spasticity which may result from them. Should one find small bits of fecal material or mucus, their simple removal by suction or a swab will permit a full view of the area which had been covered by such material. Only on one or two occasions has it been necessary, following an examination after the simple expediency of a prior bowel movement, to have the patient take cleansing enemata in order to study an obscure lesion or one seen with difficulty.

It has not been my practice to use air

which consists of simply almost standing the patient on his head, similar to the atti-

insufflation as an aid to pass a scope under direct vision into the sigmoid segment. I feel that the use of the above simple procedures and mild sedation results in not having to use this method of dilation to advance the scope.

With respect to biopsy during endoscopy, it is felt that the alligator type forceps offers a less traumatic and, at the same time, more certain way of obtaining a portion of tissue for microscopic study. Tearing the bowel with other types of forceps is felt to be unnecessary, and the trauma by tearing produces a great deal more pain than that caused by the simple biting action of the alligator type.

Additional Endoscopic Procedures. Now, more than ever before, one can find quickly and easily additional help in problems of gastro-intestinal diagnosis. Special endoscopic procedures can be had without difficulty or expense and probably should be used more frequently.

Esophagoscopy. This is perhaps the most exacting and difficult method of endoscopy used today. The esophagoscope is simply nothing more than an elongated bronchoscope; its introduction and passage, however, is considerably more difficult than is generally realized. For example, in starting to pass the instrument the initial difficulty is imposed by the contraction of the cricopharyngeus muscle and more frequently than not it becomes necessary to employ a bougie to dilate the sphincteric action of this muscle. It will be remembered that the esophagus is not a rigid straight tube. Its course is often at variance with the normal and its wall impinged upon by structures of which the examiner must be constantly aware as he advances the scope. In patients with much kyphosis it is necessary to be particularly careful in passing the instrument. It is necessary to investigate the projected track of the esophagus by the use of barium and the X-ray before proceeding with endoscopy.³

Gastroscope. It is felt by some that the gastroscope has a very limited value as an endoscopic procedure when one has at his disposal the efforts and ability of competent radiologists. It must be said in defense of gastroscopy that the procedure in experi-

enced hands is invaluable, and certainly is much less painful and dangerous than is the introduction and passage of the esophagoscope which is a rigid instrument. The gastroscope is flexible and is readily passed in the majority of cases. The latest innovation in the field of gastroscopy is the flexible gastroscope with a biopsy attachment which has been developed by Dr. E. B. Benedict of Boston. The value of this instrument lies in the ability to test for the benignity or malignancy of gastric ulcerations by securing direct biopsy material.

Peritoneoscopy. The last and by far the most interesting endoscopic procedure which is employed in gastro-intestinal diagnosis is peritoneoscopy (Figs. 2 and 3).



FIG. 2. Technique of Peritoneoscopy (schematic). A. usual site of puncture; B. insertion of pneumoperitoneum needle; C. insertion of trocar; D. visualization of peritoneal contents. (By courtesy of J. C. Ruddock, reprinted by permission from Surg., Gynec. & Obst. 65:628, 1937.)

This examination has a very definite place in the diagnosis of gastro-intestinal as well as other abdominal disease. It has a virtue worthy of emphasis since medicine is entering a phase which includes the care for an increasing number of patients above the age of 65 years. The peritoneoscope as a diagnostic instrument may often save the elderly patient, as well as others, expensive surgical procedures. In the instances of tuberculous peritonitis and in gastro-intestinal malignancies with early hepatic metastases it often avoids extensive surgery.

In a relatively large series of some 396

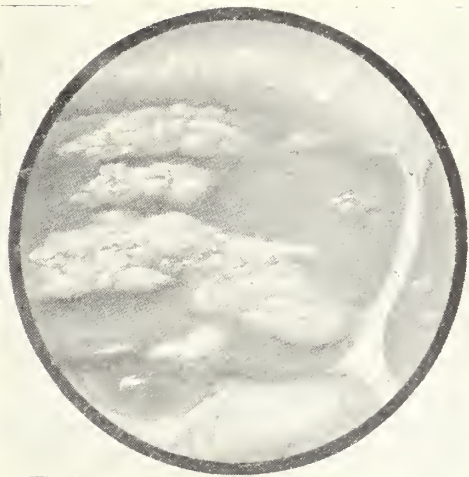


FIG. 3. Carcinoma metastasis in liver. Note the metastatic implantation on the under side of diaphragm. View as obtained through peritoneoscopy. (By courtesy of J. C. Ruddock, reprinted by permission from *Surg., Gynec. & Obst.* 65:628, 1937.)

examinations performed at the Mayo Clinic, the degree of accuracy in diagnosis was something like 94 per cent in determining benign and malignant diseases of the abdominal cavity. In only 4.6 per cent of the examinations in this series was the procedure unsatisfactory because of intra-abdominal adhesions.⁴ With the use of wider angle lenses the study of gross structure has been advanced considerably.

Fatal accidents from peritoneoscopy are infrequent and there was only one death in this large series which could be attributed to peritoneoscopy. The fatality rate by more than one author has been observed to be no greater than that which attends simple paracentesis.

Provided there are no contraindications, any patient that has ascites should be examined at least once by peritoneoscopy. The most recent innovation in this field of diagnosis has been the use of the peritoneoscope in cholangiography. It was first reported in 1945 with more recent reports in-

dicating considerable success in determining pathology in instances of non-visualized gallbladders.⁵

It is of interest and importance to mention briefly the advantage of using peritoneoscopy in taking liver biopsies. It has been possible to compare the results in a small number of cases from using both the direct acquisition of liver tissue by biopsy forceps through the peritoneoscope with tissue obtained with the Vim-Silverman needle under direct vision. It is the feeling of those who have observed these technics that the tissue obtained by direct bite from selected areas of the liver, where one can see, was just as diagnostic as that obtained by plunging the needle into the deeper portions of the liver where one cannot see.

Conclusion

Consideration has been given to several procedures which may be of assistance in the diagnosis of gastro-intestinal diseases. It should be emphasized that no one performing these specialized procedures should unduly influence the judgment of any physician or recommend them to the exclusion of diagnostic methods which are employed generally, and which may be successful in establishing a diagnosis with reasonable perseverance on the part of the examiner.

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The use of hypothermia has permitted the surgical attack upon certain cardiac anomalies which otherwise would have been impossible in "poor risk" cases. This has been particularly true in the cyanotic group of congenital heart disease. The authors report the first successful result of the surgical treatment of tetralogy of Fallot by excision of the infundibular stenosis and closure of the interventricular septal defect.

EXPERIENCES WITH HYPOTHERMIA IN CARDIOVASCULAR SURGERY*

H. WILLIAM SCOTT, JR., M.D., MILDRED STAHLMAN, M.D., HAROLD A. COLLINS, M.D., ISABELLA COLLINS, M.D., and JOHN H. FOSTER, M.D.,† Nashville, Tenn.

During the last 15 years numerous investigators^{2, 18, 21} have studied the application of local and generalized cooling in a variety of conditions. The credit for envisioning the use of generalized hypothermia as an adjuvant in cardiovascular surgery, however, belongs to Bigelow.^{6, 7, 8} He and his associates have demonstrated that the oxygen demands of heart muscle and other tissues are reduced proportionately with lowering of body temperature. As body temperature falls arterial pressure, pulse rate and cardiac output are reduced. The tolerance to temporary interruption of the venous return to the heart is extended significantly by hypothermia, thereby permitting brief intracardiac procedures to be carried out under direct vision in a dry field.

In the last two years Bigelow's basic work and concepts have been extended and applied clinically by Lewis,¹³ Swan,¹⁹ Bailey^{5, 11} and their associates, and other groups interested in cardiovascular surgery. Both experimental and clinical achievements have been noteworthy. Atrial septal defects have been closed successfully under direct vision using simple suture methods by both Lewis and Swan. Bailey has been able to close a defect in the interventricular septum in the same manner. Swan has relieved the obstruction in both infundibular and valvular forms of pulmonic stenosis under direct vision.

Much practical information has been derived from animal studies as regards the

application of hypothermia in patients with cardiovascular problems.^{3, 9, 14, 20} It has been our interest to continue explorations along these lines in the laboratory.¹⁷ At the same time we have attempted to assess the clinical value of hypothermia by using it primarily in "poor-risk" cyanotic infants with severe forms of congenital pulmonary stenosis and in other patients with cardiac disease in whom a grave danger of myocardial anoxia during operation has been anticipated. Our initial clinical experience with hypothermia forms the basis of this report.

Methods of Production of Hypothermia

There are a variety of methods for producing a generalized reduction in body temperature. These include the use of refrigerated blankets, immersion in ice water, packing in crushed ice either applied directly or in plastic bags, and the use of "deep-freeze" type of cold chamber. The body temperature may be lowered quite efficiently by circulating the subject's blood through an extra-corporeal system of tubes exposed to a refrigerating unit.¹² Various drugs, including Chlorpromazine, which apparently act directly on the thermal center, have been used to facilitate the induction of hypothermia, usually for surgical purposes in combination with some physical method of chilling.¹⁵ Induction of anesthesia prior to the exposure to cold is felt to be essential not only for the subject's comfort but also to prevent shivering which retards temperature reduction.

There are various disadvantages to each of the several methods for induction of hypothermia. The cold chamber method is awkward for operating room use and is ap-

*This study was aided by a grant from the Middle Tennessee Heart Association.

†From the Departments of Surgery and Pediatrics, Vanderbilt University School of Medicine and Vanderbilt University Hospital, Nashville, Tenn.

parently apt to produce frostbite.⁵ The refrigerated blankets are relatively slow and inefficient in lowering body temperature as compared to the procedure of packing the subject in crushed ice or immersion in ice water. The latter method which is advocated by Swan¹⁹ has the advantages of simplicity, efficiency, and economy and is the technique which we have now adopted for both laboratory and clinical use. A small tank, 9 x 13 x 36 inches in size is satisfactory for infants and young children, while an ordinary bathtub mounted on a dolly to facilitate use in the operating room is useful for older children and adults. After the induction of anesthesia the patient is immersed in the ice water bath and remains in it until body temperature is lowered to the desired range. He is then removed from the bath to the operating table, positioned, prepared, draped and operation is performed. After the completion of the operative procedure, the wound is sealed with collodion and the patient is lifted from the operating table and immersed in a tub of warm (42° C. to 44° C.) water where he remains until his temperature has returned to a normal level.

The same tank or tub which is used for cooling is used for the rewarming procedure. A continuous recording of rectal temperature is essential during the period of cooling, the course of operation and the time of rewarming. Similarly, a continuous electrocardiographic monitoring of cardiac activity is desirable. Figure 1 shows the changes in temperature, pulse rate and arterial pressure in an operative procedure carried out under hypothermia induced by immersion in ice water and followed by rapid rewarming.

Clinical Experiences

During the last year hypothermia has been used as an adjuvant to cardiovascular surgery in 11 patients with congenital heart disease at the Vanderbilt University Hospital. Each of these patients was considered to be an extremely poor surgical risk in whom the probability of surviving operation seemed doubtful. Ages ranged from 3½ months to 30 years but most patients were infants or very young children with severe manifestations of congenital pulmonary ste-

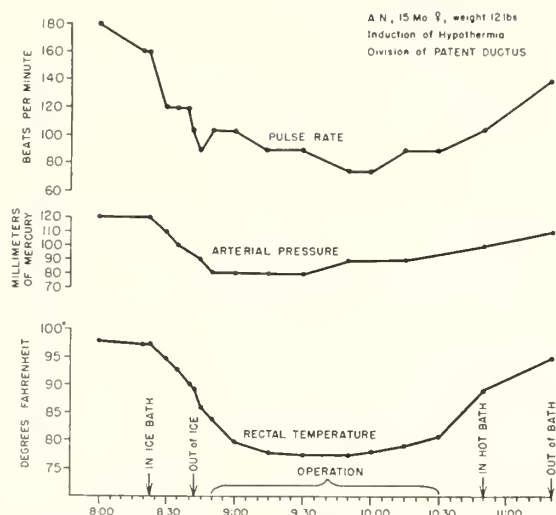


FIGURE 1. Graph depicting changes in pulse rate, blood pressure and temperature during operation under hypothermia.

nosis. In 9 cases hypothermia was used to reduce oxygen demands during extra-cardiac operative procedures and in two instances hypothermia was used to permit stasis cardiomyotomies with intracardiac maneuvers under direct vision. Brief case summaries follow:

Case No. 1. D.C. VUH 222771 (This case has been previously reported.¹⁰) The patient was a 4½ month old white male with the presumptive diagnosis of tetralogy of Fallot. Severe episodes of cyanosis, dyspnea and syncope made operation mandatory. Operation was performed May 1, 1953. Anesthetic induction was accomplished with cyclopropane anesthesia. Ice contained in plastic bags was packed about the infant. The rectal temperature decreased from 37° C. to 28° C. in 34 minutes, at which time the ice was removed. There was no apparent cyanosis at this temperature. An end to side anastomosis between left subclavian and left pulmonary arteries was then performed. There were sporadic episodes of premature ventricular contractions during operation. At the conclusion of the operation the rectal temperature was 29° C. The infant was placed immediately in a water bath at 40° C. and 40 minutes later, when his rectal temperature had reached 35° C, he was removed. The post-operative course was essentially uneventful until the 16th postoperative day when he was observed to have multiple indurated, tender subcutaneous nodules. Upon biopsy these proved to be subcutaneous fat necrosis. By the 26th postoperative day these lesions had almost disappeared and the child was discharged. On the 31st day after operation the child died of unknown causes in another hospital. Permission for an autopsy could not be obtained.

Case No. 2. G.D. VUH 217898. This was a 14

month old white male with congenital cyanotic heart disease. He had frequent episodes of profound cyanosis associated with unconsciousness. Physical examination disclosed a 15 pound infant who appeared malnourished. He was cyanotic at rest. There was a blowing systolic murmur along the left sternal border. Findings by cardiac catheterization were compatible with the diagnosis of the tetralogy of Fallot. Chest fluoroscopy demonstrated a right sided aorta. The heart had a suggestively boot-shaped configuration. An electrocardiogram was interpreted as showing sinus tachycardia and right ventricular preponderance. It was felt that operation was indicated because of the gravity of this child's condition. Operation was performed July 20, 1953. After induction of anesthesia, cooling was accomplished by placing polyethylene ice bags about the child. The rectal temperature decreased from 37° C. to 28° C. in 31 minutes, at which point the ice was removed. A left subclavian pulmonary end to side anastomosis was performed. There were occasional premature ventricular contractions during the operative period, at the conclusion of which the rectal temperature was found to be 26° C. The child was placed in a water bath at 42° C. and within 50 minutes the rectal temperature was 35° C. Immediately postoperatively he did well except for mild pharyngitis. He has continued to be mildly cyanotic although his exercise tolerance has increased and there have been no further episodes of unconsciousness.

Case No. 3. R.B. VUH 224740. This 18 month old white female had the tetralogy of Fallot with severe cyanosis and attacks of syncope. Operation was performed August 7, 1953. Anesthetic induction was with cyclopropane. Ice in plastic bags was placed about the patient, and the rectal temperature decreased from 38° C. to 28° C. in 40 minutes, at which time the ice was removed. There was a remarkable disappearance of cyanosis. An end to side anastomosis between right subclavian and right pulmonary arteries was done. During operation there was no abnormality of cardiac rhythm. At the conclusion of the operation, rectal temperature was 28° C. The child was placed in a water bath at 41° C., and the rectal temperature had reached 35° C. in 45 minutes. Postoperatively there were no complications. On a return visit to the Cardiac Clinic September 27, 1953, the parents stated that the child had had "knots under her skin" 2 weeks previously. This had been confirmed by the family physician, but there was no apparent abnormality at the time of the clinic visit. It is impossible to state categorically whether or not this represented subcutaneous fat necrosis. The operative result has been good.

Case No. 4. J.G. VUH 222283. This 23 year old white female had the tetralogy of Fallot. In March, 1953 thoracotomy was performed and infundibular stenosis found. Infundibulectomy was performed at this time. During ensuing months the patient experienced little symptomatic im-

provement. She continued to be cyanotic and have greatly reduced exercise tolerance. On readmission in September, 1953 she was found to have auricular flutter. Under hypothermia a left subclavian pulmonary end to side anastomosis was performed. With ice in plastic bags placed about the patient, it required 2 hours to reduce the temperature from 37° C. to 29° C. During operation the ventricular rate slowed to 18 to 20. At the conclusion of the operation the rectal temperature was 25° C. It required 2 hours in a water bath at 45° C. to raise the rectal temperature to 36° C. Sinus rhythm was restored during rewarming. It is noteworthy that in this adult there was little detectable change in cyanosis during the hypothermia. Her improvement since operation has been very gratifying.

Case No. 5. G.K. VUH 224041. This 2½ year old white female was diagnosed as having a tetralogy of Fallot. Operation was performed November 4, 1953. The rectal temperature was reduced from 37.5° C. to 30° C. in 26 minutes by placing her in a tub of ice water. After removal, the temperature further decreased to 25.5° C. An end to side anastomosis between left subclavian and pulmonary arteries was performed. During operation there was an idioventricular rhythm. At the conclusion of the operation, the temperature was 26.5° C. She was placed in a water bath at 45° C. and in 35 minutes the temperature had reached 35° C. She has been greatly improved since operation.

Case No. 6. J.L. VUH 228374. This 30 year old white male was operated upon under hypothermia on November 20, 1953, with the presumptive diagnosis of aorticopulmonary fistula. Preoperative studies had revealed extreme pulmonary hypertension, aneurysmal dilatation of the pulmonary artery and evidence for reversal of flow through the aortic-pulmonary shunt. Rectal temperature was reduced from 37° C. to 30° C. in 48 minutes by placing the patient in ice water. The temperature further decreased to 28° C. during operation. A patent ductus arteriosus 27 mm. in diameter was found at operation. After division of the ductus arteriosus cardiac arrest occurred and could not be reverted. It was felt that the hypothermia played no role in the cardiac arrest which was probably due to acute cor pulmonale.

Case No. 7. S.C. VUH 227370. Tetralogy of Fallot was the presumptive diagnosis in this 3½ month old white male who had severe cyanosis and prolonged attacks of syncope. Operation was performed December 18, 1953, under hypothermia. After being placed in an ice water bath, his rectal temperature decreased from 35° C. to 30° C. in 12 minutes. Following removal from the ice water the temperature further decreased to 25° C. A Potts anastomosis was performed without incident. The rectal temperature increased from 26° C. to 35° C. in 30 minutes with the child in a water bath at 44° C. There was no significant electro-

cardiographic abnormality during operation. Post-operative result has been excellent.

Case No. 8. H.W. VUH 213774. This 4 year old white male with great cardiac enlargement and incapacity had a presumptive diagnosis of interatrial septal defect. He was subjected to operation on January 8, 1954. Rectal temperature was reduced from 36° C. to 28° C. in 30 minutes by placing the patient in a bath of ice water. The temperature further decreased to 23° C. after removal from the bath. Bilateral anterior thoracotomy was carried out, the venae cavae were isolated and ligatures placed loosely about them. The azygos vein was ligated. The pericardium was opened widely. The venae cavae were then occluded. One minute later a clamp was placed across the base of the pulmonary artery and the aorta so that the coronaries were occluded. The right atrium was incised. A large defect at the annulus of the tricuspid valve was presumed to be an interatrial defect of the ostium primum variety and was closed with a continuous 3-0 silk suture. The chest was then flooded with saline and the auricular incision occluded with clamps. The clamp across the pulmonary artery and aorta was removed and the superior vena cava was released. (Period of inflow stasis was 11 minutes and outflow stasis 10 minutes.) Cardiac action was weak and the heart was massaged a few times. Ventricular fibrillation immediately supervened and could not be satisfactorily reverted. At autopsy air was found in the coronary arteries. The defect, which had been closed completely, was an unusual form of high interventricular septal defect.

Case No. 9. A.N. VUH 227177. After clinical study and cardiac catheterization this 14 month old white female was thought to have an aortico-pulmonary fistula. Severe pulmonary hypertension was present with a large pulmonary artery. At 14 months she weighed only 11 pounds. Operation was performed January 11, 1954, under hypothermia. The rectal temperature was reduced from 37° C. to 32° C. in 21 minutes by the use of an ice bath. After removal the temperature further decreased to 25.5° C. At operation a large patent ductus arteriosus was found, divided and closed. Cardiac rhythm was normal except for occasional extra systoles. At the conclusion of the operation the child's temperature was 27° C. She was placed in a water bath at 42° C. and in 30 minutes the temperature had reached 35° C. Her course since operation has been one of steady improvement.

Case No. 10. J.W. VUH 231243. This 5 month old male infant had had a brassy wheezing cough, stridor, cyanosis and repeated respiratory infections since birth. Preoperative diagnosis was tetralogy of Fallot with right aortic arch and vascular ring compressing trachea and esophagus. On February 27, 1954, operation was carried out under hypothermia. After 22 minutes in the ice water bath temperature had fallen to 31° C. Following removal temperature dropped further to

27° C. At operation the vascular ring (vestigial left aortic arch) was divided and an end to side anastomosis between left subclavian and left pulmonary arteries was established. The infant tolerated the procedure well. After operation he was placed in a water bath at 42° C. and in 30 minutes temperature had risen to 35° C. The infant's color was improved by operation and stridor was alleviated. However, excessive tracheobronchial secretions necessitated tracheotomy 24 hours after operation. The infant's course was a stormy one with several episodes of severe respiratory distress and peripheral collapse. Patchy tender areas of subcutaneous fat necrosis appeared about 1 week after operation. On the 9th postoperative day there was a sudden spurt of a small amount of blood from the tracheotomy tube followed by apnea, peripheral collapse and death. Autopsy revealed erosion of the tracheal wall with granulations above the carina and in the orifice of the left main bronchus. The left lung was atelectatic. Examination of the heart showed a patent subclavian-pulmonary anastomosis; there was a right aortic arch, right descending aorta and a single ventricle with severe stenosis of the pulmonary orifice. Subcutaneous fat showed nodular areas of fat necrosis.

Case No. 11. W.F.S. VUH 228568. This under-sized 3 year old girl had been cyanotic and short of breath since the age of six months. Physical examination revealed a harsh systolic murmur and thrill along the left sternal border. The electrocardiogram, chest X-ray, and fluoroscopy were all within normal limits. Cardiac catheterization revealed severe pulmonary stenosis, probably "pure" pulmonic stenosis with right ventricular hypertension. On March 24, 1954, the patient's temperature was reduced from 37° C. to 32° C. by placing her in a bath of ice and water for 8 minutes. Bilateral anterior thoracotomy was carried out and inflow stasis produced. The pulmonary artery was opened and the pulmonic valve inspected. This revealed a non-stenotic bicuspid valve below which was a high infundibular diaphragm. Following closure of the artery and release of the inflow stasis, which had been of three minutes duration, the patient was again hyperventilated. Once again the cavae were occluded and one minute later a clamp was placed across the outflow tracts so as to occlude the coronary arteries. Through a right ventricular incision an infundibulectomy and suture closure of a small high interventricular septal defect were performed. The duration of inflow and outflow stasis had been of eight and one-half minutes and six and three-quarter minutes respectively. The heart maintained good color, contractions were at first weak but soon improved. The only electrocardiographic changes were occasional premature ventricular contraction and transient S-T segment depression. After closure of the chest, the patient's temperature was raised from 27° C. to 36° C. by placing her in a bath of hot water at 40° C. for 27 minutes.

The patient's color was immediately improved and her postoperative course uneventful.

Comment

The immersion method for production of hypothermia has proven to be quite satisfactory in our limited clinical experience. After a short while, the operating team and anesthesiology group become quite proficient in the use of the method and very little extra bother or confusion is produced in the operating room. In infants and young children only 12 to 30 minutes in the ice water has been required to reduce body temperature to the desired range. In each child a further drop of about 5° C. has occurred after removal from the cold bath. In the one adult in which the immersion technic has been used 48 minutes was required to reduce temperature to 30° C. with a further drop to 28° C. after removal from the ice water. Similarly, we have found no great disadvantages in the use of immersion in warm water as a means of rewarming after operations under hypothermia. By removal from the warm bath when body temperature has risen to 35° C. no "rebound" hyperpyrexia has been encountered in any patient.

Although to date we have used hypothermia in only a small number of poor-risk patients who have undergone cardiac surgery, it is our present opinion that the reduction of body temperature has been of definite value. In cyanotic infants under 2 years of age with congenital pulmonary stenosis the operative mortality rate without hypothermia has ranged around 30-35 per cent.¹ Many of the deaths have occurred from cardiac arrest during operation. In the 7 cyanotic infants of the present study cyanosis disappeared during hypothermia, as it frequently does in the less severe cases with the basal conditions of anesthesia and an oxygen-rich anesthetic mixture. However, in several instances in which anastomosis was done, the venous blood in the pulmonary artery was of a well oxygenated, bright red color. The myocardium remained pink throughout each procedure and in no instance did cardiac arrest or ventricular fibrillation occur. In the single cyanotic adult in whom the technic has

been used, the value of hypothermia was less convincing as intense cyanosis persisted despite the lowered temperature. However, this extremely ill patient who had had a previously unsuccessful infundibulectomy for tetralogy of Fallot and who had persistent auricular flutter at the time of her second procedure withstood well a subclavian-pulmonary anastomosis under hypothermia and during the rewarming phase reverted to a sinus rhythm.

In the two patients thought preoperatively to have congenital aorticopulmonary fistula hypothermia was used in an effort to reduce the tendency to cardiac arrest during the closure of the fistula by the division and suture method.¹⁶ In addition, it was felt that the reduction in arterial pressure, cardiac output and heart rate under hypothermia would facilitate the technical maneuvers necessary for the closure. In each instance, at operation, a patent ductus arteriosus was found with successful division in one patient. The development of acute cor pulmonale and cardiac arrest in the other after division of his huge ductus, we believe, can be attributed to extreme pulmonary hypertension with reversal of the ductal flow and do not think this phenomenon was related to hypothermia.

In two patients stasis cardiomyopathy were done for intracardiac procedures under direct vision, with one death from ventricular fibrillation and one success. The fatal ventricular fibrillation occurred during the closure of an unusual form of high interventricular septal defect which functioned as a shunt between left ventricle and right atrium. At least two preventable errors were made, both of which are fibrillatory stimuli. One was to use cardiac inflow and outflow stasis for too long a period (11 and 10 minutes respectively) while identification, evaluation and suture of the unusual defect were accomplished. The second error in this case was to permit air to be trapped in the left ventricle when the defect was closed and coronary air embolism resulted. In the other patient, a three year old girl with tetralogy of Fallot and right ventricular hypertension, stasis cardiomyopathy under hypothermia permitted excision of the infundibular diaphragm and closure of the inter-

ventricular septal defect under direct vision with an immediate result which seems to be excellent.

The only postoperative complication encountered in this small group of patients which can be directly attributed to hypothermia is subcutaneous fat necrosis. No instances of frostbite have occurred. Subcutaneous fat necrosis of a patchy, clinically apparent variety with characteristic histologic changes developed after hypothermia in two young infants (Cases 1 and 10), (4½ and 5 months of age; it probably accounted for the "knots under the skin" observed by the parents and family physician in an 18 month old baby (Case 3) after discharge from the hospital following operation under hypothermia. This phenomenon, which is apparently the result of cooling to the point of solidification of subcutaneous fat having a high melting point as is found in young infants, has been discussed recently by three of our group.¹⁰ Experiments concerning the production of fat necrosis by hypothermia with relation to dietary fats are to be reported soon from this laboratory.¹ At present, we do not believe subcutaneous fat necrosis of the type we have observed after hypothermia to be a serious complication.

On the bases of these experimental and clinical observations it is our opinion that hypothermia offers advantages in cardiovascular surgery which warrant its continued and more extensive use. It should be emphasized that thus far we have used cooling only in patients considered to be extremely poor surgical risks. We have "leaned over backwards" in this respect so as not to let our interest in hypothermia allow its use as a panacea. All older children and adults with congenital cyanotic heart disease (with a single exception) during the period of this study have been submitted to operation without hypothermia. In two instances fatal cardiac arrest has occurred in these "average" or "good-risk" patients. As a result of this experience we plan to extend the indications for hypothermia to include its use in all patients with congenital heart disease in whom a serious danger of myocardial anoxia is anticipated during operation. Despite the strict limitations of time, the opportunity afforded by

hypothermia and stasis cardiectomy to carry out corrective intracardiac procedures under direct vision is most intriguing. It is our plan for the future to use a direct visual approach for congenital heart lesions whenever feasible.

Summary

Experiences with hypothermia as an adjuvant in cardiovascular surgery have been described. Eleven patients with severe manifestations of congenital heart disease have been subjected to operation under hypothermia. Clinical observations indicate that hypothermia offers advantages in cardiovascular surgery which warrant its continued and more extensive use.

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Report of the Committee for the Study of Immunization as Prophylaxis for Tetanus and Gas Gangrene. Champ Lyons, M.D., Chairman, Oscar P. Hampton, M.D., Howard E. Snyder, M.D., and William A. Altemeier, M.D. (by invitation). (American Association for the surgery of Trauma.)

The committee makes the following recommendations:

I. As regards passive immunization with tetanus antitoxin:

1. For wounds seen within 24 hours after injury, the usual dose of antitoxin shall be 1,500 units. Under the circumstances of co-existing diabetes mellitus or arteriosclerotic peripheal vascular disease, a large wound or known gross contamination, the prophylactic dose of antitoxin shall be 3,000 units.

2. For wounds seen later than 24 hours after injury, the indicated dosage of antitoxin should be doubled for each day of elapsed time up to a total of 10,000 units.

3. For wounds not susceptible to adequate surgical debridement, containing residual devitalized tissue, or remaining unhealed, there is an obligation to prolong the period of protection with antitoxin. The preferred procedure is to repeat the administration of 1,500 units of antitoxin every 7 days until the wound is clean or healed. An alternatively acceptable method is to administer a larger dose (up to 100,000 units) initially with the expectation that the larger dose will provide a longer period (up to 3 weeks) of passive protection.

4. The use of tetanus antitoxin should always be preceded by appropriate and meticulously performed tests for sensitivity to horse protein. The tetanous antitoxin must be diluted 1:10 in saline solution for intracutaneous or ophthalmic testing. Only a minute amount of the diluted material should be put into the eye or the skin. The positives occur when larger quantities are injected. When both eye and skin tests are positive, the danger of anaphylaxis is greater than the hazard

of tetanus. The facts about serum reactions may be summarized as follows:

(a) Negative tests render immediate serum reactions unlikely, but fatal anaphylactic reactions have occurred after negative skin and eye tests.

(b) Negative tests have no pertinency as regards vulnerability to delayed serum reactions occurring up to 10 days after administration of antitoxin.

(c) The incidence and severity of reactions are greatest with intrathecal and intravenous serum, and least with intramuscular serum.

(d) Positive skin tests, a previous dose of antitoxin, or known sensitivity to horse proteins render serum therapy dangerous. It has not been proven that desensitization programs for administration of serum are capable of providing antitoxic immunity.

(e) In the event equine antitoxin is contraindicated, bovine antitoxin should be used after appropriate skin tests are shown to be negative.

(f) Adequate prophylaxis for serum reactions may be defined as: (1) Administration of 0.3 ml. of 1:1000 adrenaline in oily base immediately prior to the injection of antitoxin. (2) Antihistamine drugs for 10 days.

(g) Adequate treatment for an established serum reaction is provided with ACTH.

II. As regards active immunization against tetanus by vaccination with toxoid:

1. Basic, or initial, vaccination should be achieved by the use of slowly absorbed alum precipitated toxoid. Combination of alum tetanus toxoid with either diphtheria toxoid, pertussis vaccine or typhoid vaccine is not only satisfactory, but appears to be desirable.

2. "Booster" doses of toxoid are best given as the more rapidly absorbed fluid toxoid.

3. There is a need to distinguish between two programs and two objectives of basic vaccination:

(a) To prepare the patient for the use of toxoid in the prophylaxis of tetanus—basic vaccination with 2 doses of toxoid at an interval of 4-6 weeks

(Continued on Page 248)

It is unfortunate that few physicians have had the opportunity to receive any formal instruction in the use of physical therapy, its aims and results. Yet its proper use as an adjunct in the management of many conditions may shorten the period of disability or may even be the deciding factor between complete as against partial disability.

PHYSICAL THERAPY IN OFFICE PRACTICE*

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The American Board of Physical Medicine established in 1947 is the most recent specialty recognized by the American Medical Association. As the use of physical agents in medicine dates back to antiquity, physical medicine is, paradoxically, at once one of the oldest and the newest fields in the medical arts.

Physical therapy, occupational therapy and rehabilitation by physical means in both the diagnosis and treatment of disease constitutes the specialty of physical medicine. Physical therapy utilizes the properties of light, heat, cold, water, electricity, and mechanical agents in the treatment of disease.

This paper is limited to the discussion of physical therapy of the ambulatory office patient.

It is the full responsibility of the physician to provide the therapist with a prescription as accurate as a prescription for narcotics or antibiotics. The minute details of technique employed, of course can be left to the therapist's discretion. A prerequisite for intelligent selection of the various modalities is a background knowledge of the physiological effects of these agents.

Heat, massage, and exercise is the triad most commonly prescribed. Of these, the former two should be primarily used as a preparation for the more important application of exercise.

Thermotherapy

Heat is applied locally to regions of the body by conduction, convection, or conversion. The most commonly used sources of *conductive* heat are moist hot packs,

paraffin, and the whirlpool. The paraffin bath is the treatment of choice for local heating of the hand. The bath is prepared by mixing eight parts of paraffin wax with one part of mineral oil and heating until it is melted. It is then permitted to cool until a film is formed over the top at which time the temperature of the bath will then be approximately 120 degrees Fahrenheit. It then may be applied by repeated dipping of the hand into the bath until a thick hot paraffin glove is obtained. After twenty to thirty minutes the paraffin is removed and may be re-used. The whirlpool bath with a temperature between 100 and 105 degrees produces a massaging as well as thermal effect and is easily applied to both upper and lower extremities. Hot moist packs are more suitable for the trunk, pelvic girdle and shoulder girdle.

Available sources of *convective heat* in the near infrared range (radiant heat) are the 250 watt hot tungsten filament bulb and the 250 watt carbon filament bulb. The so-called *luminous heat* baker, containing four to eight bulbs, is also a convenient source of heat for office application. The lamps should be placed at a distance of fourteen to eighteen inches from the skin and heat applied for a minimum of thirty minutes to achieve efficient heating.

Conversive heat is developed in the tissues by their resistance to high frequency alternating currents or fields. These may be classified as long wave diathermy, short wave diathermy, and microwave diathermy. At the present time short wave diathermy and microwave diathermy are the most commonly used. These modalities may be used interchangeably. The microwave diathermy has the advantage of more efficient localization of heat in the deep tissue. The short wave diathermy has the advantage of

*Read before the Meeting of the Tennessee State Medical Association, April 20, 1954, Nashville, Tenn.

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greater heating area. Although these high frequency currents penetrate deeply, the normal circulation permits dissipation of the energy so that the temperature rise at the depth is similar to that of the skin. Therefore, we can rely upon the skin sensation of temperature to adjust the dosage. The average duration of treatment is twenty minutes.

The physiological response to heat is vasodilatation, increased rate and volume of blood flow and increased metabolism of the tissue. In general, conductive heat penetrates only the superficial layers of the skin; luminous radiation penetrates the skin and to a lesser extent causes elevation of the temperature of the tissues lying a short distance beneath it; conversive heat is the most penetrating form available for therapeutic use. In selection of the proper agent for thermal effects, several factors should be taken in consideration,—the depth of penetration desired, the location and extent of area to be heated, and the ease and efficiency of application as determined by the available modalities. It is usually more satisfactory to order treatment that can be repeated at home, and for this reason the more simple methods of heating are indicated. As the indications for the application of heat are numerous and well known, it is not necessary to enumerate them here. Briefly, heat is used for the increase of local circulation, for relief of pain, for relief of muscular spasm, and to increase phagocytosis in inflammatory areas.

The contraindications to thermal therapy are of utmost importance. Heat should be used only with extreme caution under the following circumstances: (1) peripheral vascular diseases,—in ischemic tissue the increase in local metabolism is not adequately compensated for by an increase of circulation to dissipate the increased energy, and the development of gangrene is enhanced; (2) over anesthetic areas; (3) over areas of malignancy or suspected malignancy; (4) over tissues with a tendency to hemorrhage; (5) over areas covered by adhesive tape or plaster; (6) diathermy over the low back or pelvis during menstruation or pregnancy; (7) diathermy over tissues in which metallic objects are implanted; (8) diathermy in

acute bursitis or tendinitis; (9) acute traumatic effusions,—the application of cold is indicated in the first twenty-four to forty-eight hours to prevent further effusion.

Massage

The therapeutic application of massage is perhaps the most abused and misused modality in physical therapy. The physiologic effects are due to the reflex and mechanical actions which result in an increase in return circulation and a sedative or stimulating effect on sensory nerve endings. There is a mild increase in the cutaneous temperature but no significant increase in the metabolism of underlying tissue. The effect on the sensory nerve endings is determined by the type of massage given. The superficial stroking massage will have a sedative effect while the percussion type of massage will have a stimulating effect. Friction massage consisting of deep circular rolling movement is extremely useful in loosening superficial scars or adhesions and is employed widely in the treatment of fibrositis. Massage has no effect whatsoever in the treatment of adiposity and has no place in the treatment, per se, of increasing muscular strength or preventing atrophy. Massage is most commonly prescribed in conjunction with heat as a preparation for the more important exercise program.

Therapeutic Exercise

Therapeutic exercise, based on a sound knowledge of kinesiology, is in my opinion the most important single modality of physical therapy. *Active* and *passive* exercises are the two broad classifications. Passive exercise is used chiefly for maintenance of joint mobility and proprioceptive stimulation of the muscles. There is little change in the blood flow and, of course, no increase in muscular strength from this type of exercise. Active exercise is subdivided into *active assistive*, *active*, and *resistive* exercises. In cases where pain and muscle spasm exist, the normal pattern of motion is often lost and joint motion is limited. The application of heat and massage is utilized for the relief of these symptoms and passive exercise instituted for maintenance of joint motion. As soon as the symptoms

have subsided sufficiently to permit a functional range of motion, muscle re-education is instituted by means of active assistive exercise with gradual progression to active exercise. When the pattern of co-ordination is established, progressive resistance exercise is prescribed for increasing of muscle strength. Heavy resistance-low repetition exercise of the DeLorme type provide the most rapid results in muscle hypertrophy. When the muscle has been brought back to sufficient strength, endurance may be increased by a low resistance-many repetition exercise regime. This type of program is especially efficacious in the treatment of the weakened quadriceps mechanism resulting from a traumatic or arthritic knee.

The frozen shoulder is another problem commonly treated in the office. Heat and massage are prescribed for relief of pain and spasm and the Codman type of exercises are used initially for increasing joint range of motion. These exercises are simple and can be carried out many times during the day without special equipment. Initially, the exercises are prescribed without use of resistance. However, as the range of motion increases and the symptoms subside, increase in resistance is employed to simultaneously increase joint mobility and to increase muscular strength of the shoulder. The utilization of a shoulder wheel and finger climbing procedures should not be used until external rotation has been obtained.

Low back pain perhaps is the most common single neuromuscular complaint met in the general office practice. The usual conservative form of treatment has been heat and massage for relief of pain and application of corset or brace for support. While this is effective in symptomatic relief, the musculature of the trunk suffers from immobilization. The patient should be treated initially by strict bed rest and application of heat, massage, and traction until pain has subsided. As soon as the symptoms subside sufficiently, a program for mobilization and strengthening of the trunk should be instituted. Gentle pelvic tilting is first prescribed and as symptoms permit, flexion mobilization and trunk

strengthening is increased. The Williams and Regen exercises are most frequently used in the ambulatory patient. As muscular strength increases, the support can correspondingly be decreased.

The problem of fibrositis, although it is debatable whether this is a distinct clinical entity, is a very common symptom complex met in office practice. It is frequently seen in the office worker and can be explained on the basis of habitual faulty posture. The muscle groups most frequently involved are those of the posterior cervical neck, the upper trapezius, and the posterior shoulder groups. The basis of treatment is the correction of the faulty posture and strengthening of the overstretched and tense muscle groups. The Sayre head sling is commonly used for stretching of the tight posterior cervical muscle groups while increasing cervical mobility by active motion with traction applied. The stretching of the tight pectoral muscles is accompanied by specific strengthening of the posterior shoulder groups and the dorsal erector spinae group. The explanation of the cause and the rationale of the treatment to the patient is extremely important, as in all problems of posture, if the satisfactory continuation of home treatment is to be expected.

It is beyond the scope of this paper to discuss the details of muscle re-education in the out-patient cases of poliomyelitis, hemiplegia, multiple sclerosis, Parkinson's and cerebral palsy.

Additional Modalities

The use of electrotherapy in the role of muscle re-education of both the normally innervated muscle and the denervated muscle has not been discussed. Electrical stimulation of denervated muscles is an aid in the maintenance of the weight and bulk of the denervated muscle but in no way influences the rate of regeneration of the nerve. However, by virtue of the muscular contraction produced it increases the deep circulation. To be effective, it should be performed daily and against maximal resistance. It is not often practical that the patient can make daily office visits over the long period of time usually necessary in these conditions.

With the advent of chemotherapy, antibiotic therapy, and vitamin therapy, the specific indications for ultraviolet radiation therapy has greatly diminished. The chief uses at the present time are as adjuncts in the treatment of indolent wounds, ulcers, and in certain few dermatologic diseases.

The interest in the biologic effects of ultrasonics has been intense in the past few years. Its thermal effects have been well established but its specific dosage is still a matter of controversy. Until this is established, unlimited use is not without danger.

Conclusion

As a plea for the judicious use of physical therapy, this paper has stressed its limitations. Unnecessary prescription of physical therapy, for the sake of "doing something" for the patient is to be condemned. Prolongation of therapy beyond reasonable limits of effective response, of course, is ethically and morally wrong.

Discussion

FLORENCE I. MAHONEY, M.D. (V.A. Hospital, Memphis): First, I wish to compliment Dr. Britt on his excellent paper. He might well have titled it "The Use and Abuse of Physical Therapy in Office Practice."

Unfortunately, few physicians have the opportunity to see good practice of physical medicine, or even of physical therapy, in their training in medical college or as interns or residents. Many come to think of physical therapy as heat and massage to be used indiscriminately at the request of the patient, or if no other treatment has been helpful. Others turn the patient over to a physical therapist with no definite prescription and yet they would not give such indefinite directions or responsibility to a nurse. Still others become easy prey to the salesman of electrical devices, many of which do not produce the results claimed for them.

As Dr. Britt has indicated, many physical therapy treatments done in office practice with ambulatory patients could be carried on at home. Many chronic conditions need daily treatment over a long period of time and most patients cannot pay for this. Specific home instructions should be given and the patient should understand the dan-

gers of the misuse of heat at home. When hot paraffin is used at home it should be heated in a double boiler—not directly on the stove. The infra-red bulbs bought for home use might easily burn and the patient should be instructed in the safe distance from the skin and the use of a towel over the area to prevent burning.

Hydrocollator packs made by the Chattanooga Pharmacal Company are an easily applied type of hot moist heat. The cost is nominal and the pack is more convenient to use than the usual hot pack if the treatment is to be continued for some time. Hot soaks can be substituted for whirlpool baths with the same effect except for the light massage of the whirling water. Hot tub baths can be used for backs, shoulders and extremities. The temperature of the water in the latter case should be only slightly warmer than skin temperature (around 100° F.), since the patient should stay in 20-30 minutes. Moist and infra-red heat are usually more relaxing than diathermy. The latter looks more mysterious to the patient but often is less helpful, as Dr. Britt has indicated.

A patient may respond better to one type of heat than to another, and this often cannot be determined without trial. Dr. Britt has stated that exercise is the most important single modality of physical therapy, however it must be prescribed with care to accomplish its purpose and given early to prevent contractures. Often the patient must be taught that even in the presence of pain he must exercise to prevent contractures, as in frozen shoulder or arthritis.

Electrical stimulation for the treatment of paralyzed muscles is particularly useful and successful in Bell's palsy. If started soon after the onset of the condition this frequently clears up without any residual in several weeks. If the paralysis is marked some support should be used for weak muscles of the mouth and a protective covering should be placed over the eye until sufficient muscle power returns.

As with any other treatment, it is important to know when the patient has had the maximum benefit in physical therapy. Unnecessary prolongation of this type of treatment, or unwise use of heat and massage frequently cause the patient to hang on to a minor disability, even making it a major one in his mind.

There is nothing magical about physical therapy. If the physician does not know, as he does with drugs, what he expects to accomplish with each modality of physical therapy he may wish to use, he cannot anticipate good results from the treatment. If prescribed with common sense it will be given only when needed and stopped when it has served its purpose.

Many orthopedic conditions are presented to the family physician. He must know which he can manage adequately and which would do better in the hands of one specially trained to handle such problems.

ORTHOPEDIC PROCEDURES FOR THE GENERAL PRACTITIONER*

ROBERT C. ROBERTSON, M.D., Chattanooga, Tenn.

The fields of medicine and surgery have broadened to a degree which prevents any one of us from mastering more than a small segment of the vast accumulated knowledge of our profession. However, the application of principles and methods used within each specialized field may be employed to advantage by all. Time permits only brief mention of a few of the many orthopedic conditions encountered by the general practitioner, together with some of the principles and methods of treatment which have proven helpful. As requested by the Scientific Program Committee, the opinions here expressed are personal, rather than based upon a compilation of the literature.

A detailed history, a careful physical examination, and the addition of selected special examinations by X-ray and laboratory, are essential for diagnosis, the foundation upon which rests all successful treatment. More errors in diagnosis arise from failure to examine the patient properly than from any other single cause. Removal of clothing, observation of the attitude in erect, recumbent, and weight bearing positions, recording the range of active and passive joint motion, and the use of a firm examining table of sufficient size to permit relaxation of muscles are necessary in the examination for any chronic complaint involving joints proximal to the wrist or ankle. The person who walks with a limp and complains of pain in the knee often has disease involving the hip or the lumbar spine, while pain in the shoulder or hand is frequently caused by diseases of the cervical spine.

Before X-ray films are made, physical examination should disclose the area of suspected disease or injury. Films should be made in two or more planes, must be of good quality, and include the area of patho-

logic change. X-ray films taken early in the course of bone or joint disease may fail to disclose changes which become apparent at a later date.

Congenital Deformities

The causes of congenital deformity are unknown. Metatarsus varus and talipes equino varus or club foot, are the most frequently encountered congenital orthopedic deformities in Tennessee. These defects are apparent when the foot of the new born is examined. They do not correct themselves spontaneously, nor are they corrected by special shoes. Treatment should be initiated within the first few weeks of life by gradual correction with casts. When treatment is delayed for several years various surgical procedures are usually necessary, and a favorable result is uncertain. The danger of recurrence is great and observation should be continued for a period of five years following apparent correction.

In all cases of congenital deformity the situation should be frankly discussed with the parents, most of whom are alarmed by the comments of neighbors, and the fear of other deformed children. What shall we tell them? Murphy,¹ after a study of congenital deformities in the Philadelphia area, concludes, "Parents of congenitally malformed children are much more likely to have another similarity affected than are average parents in the general population. In the general population the chance is approximately one in two hundred, whereas in a family with a defective child, it is perhaps one in eight. The first child to be conceived after the birth of the first defective child is more likely to be normal than is the second." We can assure the parents that the defect, unless syphilitic, is not the result of misconduct or neglect on the part of either parent, and that the probability is that the next born will not be defective.

*Read before the Meeting of the Tennessee State Medical Association, April 20, 1954, Nashville, Tenn.

Infections

In the commoner infections of bones and joints,—namely, hematogenous, pyogenic osteomyelitis and tuberculosis,—the incidence has been greatly decreased and the management has been revolutionized within the past decade, largely as the results of antibiotic therapy and of preventive medicine.

Acute hematogenous pyogenic osteomyelitis, once rather common in childhood, is now rarely encountered in orthopedic practice. When, on pressure, a pain point is found adjoining the epiphysis of a long bone in a child who presents evidence of local pain, pyrexia, and leucocytosis, acute hematogenous osteomyelitis must be suspected. Diagnosis in the early stage must be made by physical examination as X-ray evidence will not appear until approximately fourteen days following the onset of the disease. When the diagnosis has been made, treatment with antibiotics, combined with splinting of the extremity to prevent pathologic fracture or epiphyseal separation will in many instances arrest the disease, even though sequestra develop. In chronic cases which show involucrum, sequestrum formation and recurrent draining sinus, wide saucerization with primary closure of the wound and antibiotic therapy are often successful in producing arrest.^{2, 3, 4, 5}

As the result of tuberculosis testing in cattle, pasteurization of milk, and the isolation of active cases, tuberculosis is becoming increasingly rare. While fusion of the diseased joint is the ideal end result, medical treatment by immobilization of the affected joint and the administration of streptomycin combined with para-amino-salicylic acid or the various isonicotinic acid derivatives show promise in early cases, of arresting the disease and retaining useful motion.

Injuries

With the large number of motor accidents on our highways, the increased number of elderly people in our population, and the frequency of injuries within the home, trauma presents an ever-increasing problem. Multiple injuries are common, and the presence of a fractured spine or extremity does not exclude additional injuries, not only of

the surrounding soft tissues, but of injuries involving the brain or spinal cord, the chest, abdomen or genito-urinary system. In many cases shock or hemorrhage is present, and the fractures are compound.

The treatment of shock and hemorrhage by control of bleeding, rest, splinting the fracture, narcotics for the control of pain, and the administration of whole blood as indicated, may prove to be life-saving measures. When transportation for some distance for definitive treatment is necessary, shock should be controlled and the fracture splinted before the patient is loaded into ambulance. The patient with an injured spine must not be permitted to sit or stand, and the one with an injured lower extremity should be lifted bodily and should not attempt to bear weight even with the support of well intentioned friends. If Thomas splints are used, traction should be applied by means of adhesive strips rather than by encircling anklets or wristlets in order to avoid local soft tissue pressure necrosis. Improvised splinting, using well padded boards, a magazine bound about an extremity, binding the legs together by a bandage, or the use of a sling with arm bound to the body, will provide excellent splinting in the majority of cases.

Compound fractures are emergencies, and are best treated by debridement and primary closure when seen within six hours following injury. If longer time has elapsed, delayed primary closure is often indicated. Antibiotics should be given before and following surgery. Cultures to determine the organism and antibiotic sensitivity must be routine at the time of surgery if "shot gun" antibiotic therapy is to be avoided. Priority and sequence of treatment in patients suffering multiple injuries combining severe brain, chest or abdominal wounds and compound fractures of the extremity, tax the judgment and skill of all concerned. Each problem must be solved on its own merits.

Methods of treatment to be employed in the management of fractures will vary widely depending upon the location and type of fracture, the age of the patient and of the fracture, the general condition, the occupation, the economic and social status

of the patient, and the experience and skill of the doctor. Basic principles of the treatment of fractures are early reduction, adequate immobilization of the fracture until union is obtained, and early mobilization of all uninjured parts. Reduction is usually accomplished by traction which may be obtained by closed manipulation, skin or skeletal traction devices, or by open reduction. Accurate reduction is particularly indicated in fractures near or involving joints and, unless it can be obtained by closed methods, open reduction with or without internal fixation is necessary.⁶

Certain fractures lend themselves to open reduction combined with internal fixation, thereby permitting great reduction in hospital time, earlier motion of adjoining joints and decreased systemic and local complications. This is particularly true in fractures about the hip joint and in fractures of the shaft of the long bones of the lower extremity. Intramedullary fixation is frequently the treatment of choice in fractures of the shaft of the femur, in one or both bones of the forearm,⁷ in the metacarpals or metatarsals. Many fractures involving the shaft of the tibia are oblique, and screw fixation combined with external fixation by cast is often elected.

It must be emphasized that open reduction of any fracture is attended by dangers of infection and delayed or non-union. Open reduction should be reserved for fractures which cannot be treated equally well by closed methods, and should be performed only by those who are experienced in fracture surgery.

Following reduction and fixation of the fracture, every effort must be made to prevent local and systemic complications by early activity through use of a wheel chair, by early weight bearing when possible, and by active motion of uninvolved joints taken on an hourly basis even while confined to bed. Daily check is necessary to insure that these instructions are followed. After removal of apparatus, active resistive exercises, using gradually increasing weights, are invaluable in restoring muscle tone and strength, and in increasing joint motion.

In all wrist injuries, the probability of carpal-scaphoid fracture must be suspected.

Oftentimes the fracture will not be apparent on X-ray films made immediately following injury; but as absorption of bone adjoining the fracture line occurs, films made two or three weeks later will usually demonstrate the fracture. Immobilization until union occurs is imperative, although it is possible this may require six months or longer. In all fractures involving the hand or wrist, care must be employed to fix the parts in the functional position of grasp. The use of straight splints for finger fractures usually results in impaired joint motion. Active motion of the metacarpophlangeal and interphalangeal joints, as well as the elbow and shoulder, should be started as early as possible and continued until the fracture has healed and function of the part has been restored.

In fractures of the shaft of the long bones in children, it is unnecessary to strive for the same degree of anatomic reduction which we desire in adults, and with rare exceptions closed methods of treatment should be employed. Even though end to end engagement is not always obtained, examination one year following injury will usually show the extremities to be of equal length, the medullary canal to be well restored, and frequently the site of the fracture cannot be determined. Open reduction in children's fractures should be limited to those involving joints such as the radial neck, the condyles of the humerus and femur, the patella and the olecranon, all of which are uncommon.

The X-ray appearance of epiphyses may be confusing and may simulate fracture. In case of doubt, X-ray examination of the opposite side is indicated.

Injuries to the knee joint with no change demonstrable on X-ray examination⁸ are most frequent in, but are not limited to, athletic sports. The history should include the mechanism of the injury, the location of pain, presence or absence of symptoms suggesting loose body, the occurrence of locking together with methods used for correction, and subsequent episodes of disability. On examination one determines the presence of increased joint fluid, antero-posterior or lateral instability of the joint, and localized tenderness on pressure over

the medial or the lateral semilunar cartilage with the knee both in flexion and in extension. Occasionally a loose body will be palpable. If the joint is distended, aspiration to determine the character of the fluid is helpful. If blood containing fat globules is obtained, a fracture is probably present. If a fracture of the semilunar cartilage is present excision of the damaged cartilage is the treatment of choice. In severe sprains of the collateral ligament, a walking cast extending from ankle to groin is preferred. In the event of severe lateral instability, early surgical repair of the collateral ligament is indicated. When loose bodies are present they should be excised. Following surgery, athletic sports should be excluded for a period of six to twelve months. Quadriceps atrophy invariably follows knee injuries or surgery and is best minimized and corrected by straight leg raising exercises beginning the day of surgery, and later by resistive flexion-extension exercises using increasing amounts of weight as tolerated.

Back Pain

The patient having chronic low back pain usually presents a history of trauma often-times mild, such as extending the spine while washing the face or tying the shoes. The pain may be localized to the low back area or may be referred into one or both extremities with or without sensory and reflex changes. Pain is usually increased by active motion of the spine or jarring, and may be increased by coughing, sneezing, defecation or climbing stairs. A detailed history is invaluable. Was the onset sudden or gradual? Was the spine flexed or extended at the time of onset? Where was the exact site of the initial pain? Did it remain localized or was it referred? Is it increased by activity? Is it relieved by recumbency or local heat? On examination one should note and record the exact site of pain, the appearance of the spine in erect weight bearing position, the presence or absence of flexion of the hip or knee when standing, of muscle spasm in recumbency and on active spinal motions, of localized spinal rigidity, of pain on pressure over the sciatic notch and the course of sciatic or

posterior tibial nerves, of atrophy of thighs or calves, the response to straight leg raising tests, and all motor, sensory or reflex changes which may be found in the lower extremities.

X-ray studies taken in antero-posterior and lateral views often show no evidence of bone, joint, interspace or other pathology. Oblique views are at times helpful. If fracture, dislocation, spondylolisthesis, interspace narrowing or other definite findings are demonstrated, they may aid in confirming our clinical impression, but when negative the diagnosis must be made from the history and physical findings.

If the underlying pathology is felt to be arthritis, sprain, ligamentous tear, or intervertebral disc injury, conservative treatment consisting of absolute bed rest on a firm mattress with underlying boards in position of comfort, using local heat and massage as required for pain, should be initially employed as a means of reducing the period of disability. If fracture of the transverse processes is found, some type of external support such as adhesive strapping, a ribbed corset or even a body cast may be necessary but under no circumstance should the patient be told, "You have a broken back." To do so only invites unjustified fears and prolonged disability.

Painful Shoulder

The painful shoulder group is that in which a history of injury is lacking, or when present is of minor degree, and on which X-ray does not demonstrate evidence of fracture, dislocation or other specific bone pathology. The clinical symptoms may vary from mild pain on abduction or rotation of the shoulder, to extreme pain with practically complete absence of active or passive joint motion. Atrophy of the muscles about the shoulder may be extreme. Frequently there is localized tenderness on pressure over the antero-lateral aspect of the humeral head, and X-ray examination often shows varying degrees of calcification within the rotator cuff of the humerus.

In the acute case showing calcification, needling under local anesthesia and the injection of Hydrocortone, followed by hourly active shoulder exercises and the use of lo-

cal heat oftentimes produce spectacular and rapid improvement. Recovery is slower in the more chronic cases. Surgical excision of the calcified area is rarely necessary. If tenderness on pressure is more diffuse about the humeral head, X-ray therapy followed by the use of local heat and active shoulder exercises often results in gradual improvement. The avoidance of local chilling and the wearing of garments covering the shoulder both by day and by night are helpful.

Care must be taken in all of the painful shoulder cases to determine through history, physical and X-ray findings, the possibility of nerve root irritation arising from arthritis or injury of an intervertebral disc in the lower cervical spine. Here, a localized pain point about the shoulder is rarely encountered, but symptoms of varying degree of intensity are found in the lower cervical region. Sensory or reflex changes in the extremity may be present. Treatment by head traction combined with local heat and the subsequent use of a Thomas collar is indicated. In the event of disc lesions which do not respond to conservative methods excision of the disc may be necessary.

Bone Tumors

Bone tumors are relatively uncommon. Fortunately, many of these tumors are benign, but some—as osteogenic sarcoma and Ewing's tumor—are extremely malignant. The history must include the onset of the pain and its severity, duration of symptoms and rapidity of tumor growth. Physical, X-ray and laboratory examinations will aid greatly in arriving at a presumptive diagnosis, but in many instances a correct diagnosis can be made only after biopsy. The specimen should be taken under general anesthesia, the tissue being removed from the marginal portion of the tumor including a portion of bone and medullary content. In lesions involving the spine, needle biopsy can often be employed.⁹ Amputation should be deferred until properly stained specimens have been studied by a competent pathologist. In doubtful cases consultation between pathologists skilled in the interpretation of bone tumors should be obtained.

Treatment will vary widely with the type of tumor, its known response to radiation

and the likelihood of metastasis. Usually high amputation or disarticulation is the only treatment of value in malignant tumors of the extremity. When metastasis has already occurred, consideration should still be given to amputation of the extremity as a means of avoiding a fungating infected mass which adds to the difficulties of adequate patient care.

Summary

An adequate history and careful physical examination should be obtained in all patients presenting bone or joint complaints. X-ray and laboratory studies are often invaluable adjuncts in arriving at a diagnosis.

Treatment will vary widely depending upon the underlying pathology, but in all instances the method selected should be adapted to the individual needs of the patient under consideration.

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Discussion

SAMUEL B. PREVO, M.D. (Nashville): Mr. Chairman and members of the Tennessee State Medical Association. As was expected, Dr. Robertson, through his rich experiences in the practice of Orthopedic Surgery, has most ably pointed out for us many valuable suggestions in his discussion of the broad subject of "Orthopedic Procedures for the General Practitioner." While I have neither the temerity nor the desire to add to Dr. Robertson's paper, I would like to add my endorsement of some of the points he has made. The matter of taking a complete history and doing

a well organized, thorough physical examination cannot be overemphasized. The oversight of obvious orthopedic impairments on initial examinations is sometimes startling to say the least. The matter of the discussion of congenital abnormalities with parents is most important. Fortunately, today, open public discussions of various afflictions of children has made parents less prone to want to conceal the deformities of their children. However, there is still a great responsibility on the part of family physicians to assure parents that these abnormalities are not the result of their misconduct. Such assurance can frequently eliminate the source of loss of faith and distrust of one parent for another and provide a much more healthy psychological environment to which an already handicapped individual must adjust.

Proper splinting or other methods of immobilization of injured parts before transportation should be re-emphasized. This has repeatedly been pointed out, in the management of the injured, yet we still see patients with badly comminuted fractures who have been transported for considerable distances without support of any kind. This

situation so materially adds to shock and further injury of the parts that primary surgery may have to be delayed beyond the time limits which have been set up for such procedures. These situations are usually attributable to incompetent ambulance personnel who pick up the injured at accident sites.

Dr. Robertson has told us that open reduction of fractures should be reserved for those patients who cannot be treated by closed methods, so let us develop the philosophy that every patient with a simple fracture deserves the benefit of an attempt at closed reduction before we convert his simple fracture into a compound one through surgery.

Finally, I was impressed by the author's reference to caution in evaluating injuries about the wrist. A great pioneer in orthopedic surgery, under whom Dr. Robertson and I had the privilege of studying, once passed along a succinct and somewhat earthy aphorism which I think is worth remembering. It was: "There is no such thing as a sprained wrist."

(Continued from Page 238)

and a third dose given 6-12 months later with subsequent booster doses given every 4 years or at the time of injury.

(b) To provide a sustained and durable immunity for patients (children, farmers, etc.) especially prone to tetanus infection of trivial wounds—basic vaccination with 3 doses of toxoid at an interval of 4 weeks with a fourth dose given 6-12 months later. Subsequent booster doses should be given every 2 years or in the event of a major wound.

III. As regards the use of tetanus antitoxin and toxoid at the same time for prophylaxis:

1. In individuals not previously vaccinated with toxoid and receiving tetanus antitoxin, active immunization with toxoid should be started concomitantly because the sensitizing effect of the prophylactic serum renders subsequent antitoxin therapy hazardous and uncertain. Toxoid should be 1 ml. in quantity, given in a separate syringe and at a separate site.

2. In individuals *previously vaccinated* with toxoid, although the matter is controversial, the coincidental use of toxoid and antitoxin may be considered whenever:

(a) A massively contaminated wound and delayed surgical care create the hazard of likely onset of tetanus prior to the lapse of a further 4-5 days required for response to toxoid.

(b) The lapse of more than 4 years from the time of the last booster dose produces a situation

wherein a small but definite group of previously vaccinated patients require 6 or more days for response to toxoid.

IV. As regards the prophylaxis of gas gangrene:

1. Prophylactic antitoxin is ineffective and is not recommended.

2. The most reliable prophylaxis of gas gangrene is early and adequate wound surgery (debridement) with the wound being left open. Several days later, when the wound is clean, it may be closed by delayed suture.

3. Gas gangrene toxoids show experimental promise, but await clinical evaluation.

V. As regards certain over-all problems:

1. Basic vaccination with tetanus toxoid for mass prophylaxis is an essential in catastrophe anticipation. Specific identification of the vaccinated is a part of this recommendation.

2. Commercial manufacturers should be requested to resume the production of bovine tetanus antitoxin.

3. There should be wider adoption for civilian injuries of the principles of debridement with the wound being left open initially as the most effective prophylaxis for all anaerobic wound infections.

(Additional copies of this report may be obtained by writing Dr. James K. Stack, Secretary, American Association for the Surgery of Trauma, 700 North Michigan Avenue, Chicago 11, Ill., at 15 cents each.)

CLINICOPATHOLOGIC CONFERENCE

City of Memphis Hospitals, Memphis Non-Lipid Histiocytosis (Letterer-Siwe's Disease)*

DR. JAMES CLARK: This white male infant was admitted to John Gaston Children's Hospital at age 2½ months February 23, 1951, with the following complaints: (1) bleeding tendency since birth; (2) oral sores for 2 weeks; and (3) fever for one week.

The birth history was normal. The infant's first bowel movements were bloody, with a raspberry jam appearance, and blood was said to have been present in the stools until the infant reached 6 weeks of age. Petechiae and purpuric lesions appeared on the face and in the mouth at about 2 months of age, and epistaxis occurred a few days prior to admission. Vomiting occurred the day of admission and blood was seen in the vomitus. The fever, present for a week, was described as low grade. No bleeding tendency or other significant illnesses were elicited in the family history.

The infant was fretful and irritable but well developed and nourished, with a fine petechial rash present over the body and most marked on the face. The head was normal in size and shape and no nuchal rigidity was found. The ears were normal, the nasal turbinates were hyperemic, and purpuric bleeding lesions were seen in the oral mucous membranes. Heart rhythm was regular and the rate rapid. Breath sounds were clear.

*From the Institute of Pathology and Division of Pediatrics, University of Tennessee College of Medicine, and the City of Memphis Hospitals, Memphis, Tenn.

The liver edge extended 3 cm., and the spleen 5 cm., below the costal margin. The petechial rash was macular and erythematous in some areas and did not fade on pressure. Laboratory studies are summarized in Tables 1, 2, and 3.

Table 2. Examination of Peripheral Blood

Normal	Cell	Date		
		2-23-51	9-1-51	5-21-52
	Myeloblast	1.0%	0%	0%
	Progranulocyte	0.5	0	0
	N. Myelocyte	2.0	0	0
0-1	N. Metamyelocyte	3.0	1	2
2-10	N. Band	12.0	7	6.5
50-70	N. Segmented	37.0	28	23
1-4	Eosinophil	2.0	2	12.5
0-1	Basophil	1.0	0	0.5
	Lymphoblast		0	0
	Prolymphocyte	2.0	0	0
20-40	Lymphocyte	33.0	60	41.5
1-6	Monocyte	5.0	2	11.0
	Plasmocyte	0.5	0	1.0
	Atypical cell	1.0	0	2.0
Total cells counted		400	100	200
Disintegrated cells per				
100 intact WBC		74		

2-23-51: Red blood cells uniform in size and shape and staining. Normochromic. Moderate diffuse basophilia. 1 to 2 nucleated RBC (rubricytes and metarubricytes/100 WBC.)

Summary of abnormalities: "RBC regeneration with nucleated reds and diffusely basophilia in peripheral blood. Thrombocytopenia. Shift to left in granulocyte series. Eosinophils and basophils present. Few immature lymphocytes and monocytes. Numerous smudges."

Interpretation: Secondary thrombocytopenia purpura. (Examined by A. B. Weir, M.D.)

9-1-51: Red blood cells moderate hypochromia, slight poikilocytosis, slight anisocytosis. Thrombocytes, 3 100 OIF. White blood count, 7,650/cu.mm.

Summary of Abnormalities: Neutropenia, relative and absolute. Lymphocytosis, relative and absolute.

Table 1. Hematologic Data

Date	Platelets Per 100 O.I.F.*	Platelets Rees/ Ecker	Bleeding Time/Min.	Clotting Time/Min.	Clot Retraction	Quality of Clot	Capillary Fragility	Hgb.	RBC	WBC†
2-23-51	5		4½	6	Poor, 10%	Fairly firm	4+	13.0	3.42	8,500
2-24-51	4	15,000	10							
4-12-51	2	35,000								
6-12-51	18	45,000								
9-1-51	3							10	3.19	7,650
9-22-51			Less than 10	3						
10-3-51								7.5		
10-15-51		14,000								
11-22-51			15	3.0	None	No clot				
12-14-51		50,000								
12-15-51‡		34,000								12,150
12-17-51		140,000								
12-20-51		210,000								
12-22-51		200,000								
12-26-51										32,650
1-11-52		290,000						11		25,750
1-29-52		308,000								
4-9-52	8	150,000								
5-21-52	454									

*O.I.F.—Oil Immersion Field.

‡Splenectomy.

†See Table 2 for Differential Count.

Interpretation: Thrombocytopenia, neutropenia, consistent with hypersplenism. (Examined by R. C. Sexton, M.D.)

5-21-52: The red blood cells revealed rouleaux formation, hypochromia, and a tendency to macrocytosis. Occasional target cells. Nucleated red cells and diffusely basophilic cells. Few stipple cells and cells with Howell-Jolly bodies noted. An occasional hyperlobulated polymorphonuclear was seen. The atypical cells seen are early cells with deep blue cytoplasm, condensed about the periphery and round nuclei in which nucleoli, or the remains of nucleoli can be seen.

Interpretation: Anemia with evidence of defective hemoglobin and red cell formation, and abnormal regeneration. Thrombocytopenia. Eosinophilia and monocytosis. Neutropenia with shift to the left (Examined by L. W. Diggs, M.D.)

Table 3. Bone Marrow Studies

Normal	Cell	Date		
		2-23-51*	4-23-51*	6-12-52*
0-1	Stem cell	3.5%	5.0%	2.0%
0-1	Myeloblast	0	0.5	0
1-5	Promyelocyte	3.5	2.5	2.0
2-10	N. Myelocyte	6.0	6.0	13.0
5-15	N. Metamyelocyte	11.0	9.0	12.5
10-40	N. Band	16.5	23.0	9.0
10-30	N. Segmented	1.5	7.0	4.5
0-3	Eosinophiles	5.0	7.0	10.0
0-1	Basophils	3.0	0	0
5-15	Lymphocyte pro-lymphs	31.5	15.0	15.5
0-1	Plasmacyte	1.0	0.5	4.0
0-1	Histiocyte	2.5	1.5	4.0
0-2	Monocyte	1.0	1.5	0
	Atypical cell	0	4.0	0
0-1	Rubriblast	0	0	1.0
1-4	Prorubricyte	5.5	1.5	2.5
5-10	Rubricyte	8.5	7.0	8.0
10-20	Metarubricyte	0	9.0	12.0
4:1	Leucocyte: Rubricyte ratio	6:1	5:1	3.2:1
Total WBC cells examined		400	600	200

*2-23-51: Sternal marrow. 4-23-51 and 6-12-52: Tibial marrow.

2-23-51: Megakaryocytes plentiful, mature, but not producing platelets. Thrombocytes rare. Many disintegrated cells per 100 W.B.C. **Remarks:** "Very hyperplastic. Moderate number mitotic figures. On low power view several clumps of 5 to 6 large cells with indistinct demarcation, eccentric nucleus with chromatin structure like histiocytes, 1 to 3 large nucleoli, light area on cytoplasmic side of cell, dark blue cytoplasm like ground glass. Some such cells contain 2 nuclei. The cells classified as histiocytes are smaller than usual, have discrete cell boundary."

Analysis of Abnormalities: "Increase in lymphocytes with shift to left. Slight increase in histiocytes and presence of clumps of cells resembling histiocytes and plasma cells in various respects. Increase in stem cells. Megakaryocytes abundant, but not producing platelets." **Diagnosis:** "Suggestive of malignancy of Reticulo-Endothelial system." (Examined by A. B. Weir, M.D.)

4-23-51: Majority of red blood cells are normal, occasional basophilic erythroblast. Few megakaryocytes demonstrable and few thrombocytes. Megakaryocytes counted, 20: Promegakaryocytes, 1%; Megakaryocytes not producing platelets, 18%; Megakaryocytes producing platelets, 1%.

Remarks: "Specimen is satisfactory. The marrow is cellular. Mitotic figures are demonstrable. Some of neutrophils appear to be hyperlobulated in metamyelocyte and band stage are larger than normal. No malignant cells seen. Vacuoles in

many of the neutrophils. The atypical cells (4.0%) are large cells with fine granules which are on the borderline between histiocytes and myelocytes. The leukocyte/rubricyte ratio may be corrected to 'histiocyte and myelocyte leukocyte/rubricyte ratio' for the count." **Analysis of Abnormalities:** "Defective platelet formation by megakaryocytes. Spread in distribution of cell types with increase in monocytes, histiocytes, eosinophils and stem cells." **Diagnosis:** "Not diagnostic. Macrohyperlobulated neutrophils suggest deficiency of growth factor (B_{12} or related substances.) Suggest treatment with B_{12} and discontinuation of other drugs. If no effect—splenectomy." (Examined by L. W. Diggs, M.D.)

6-12-52: Red blood cells are normochromic, normocytic. Occasional target cell. Megakaryocytes and thrombocytes demonstrable. **Remarks:** "Tibial aspiration yielded only one drop of blood. The preparation is satisfactory and the marrow is cellular in character. Occasional mitotic figure. Numerous smudge cells with nuclei resembling histiocytes. Occasional nests of cells composed of cells with ill-defined and merging cytoplasm and with nuclei which vary in size and shape from round to multilobulated. Intermingled with these cells are numerous eosinophils and nucleated red blood cells. In thinner portions these cells morphologically resemble non-granular histiocytes (undifferentiated mesenchymal cells.)" **Summary of Abnormalities:** "Increased plasmacytes. Increased histiocytes and undifferentiated mesenchymal cells. Shift to left of white blood cells. Eosinophilia." **Diagnosis:** "Histiocytes compatible with Letterer-Siwe's Disease (reticulo-endothelial granuloma. Suggest recheck X-ray survey of cranium." (Examined by R. D. Gourley, M.D., and L. W. Diggs, M.D.)

Progress in Hospital: Three whole blood transfusions were administered during the first hospital visit and the infant was allowed to go home March 7, 1951. On readmission, March 15, 1951, a generalized lymphadenopathy was observed. Additional bone marrow studies were carried out, Table 3. Blood transfusion was administered, and the infant was discharged March 28, 1951.

Because of epistaxis he was readmitted the same day. Additional hematologic studies were made. After several blood transfusions and vitamin B_{12} therapy the infant was discharged May 25, 1951. He was readmitted June 7, 1951, at age 6 months, because of increasing petechiae and passage of bloody stools. During this hospital visit he received Cortisone and blood transfusions. A left axillary lymph node was removed June 27, 1951, (see pathology report below) but the microscopic examination was not diagnostic.

The infant was released August 16, 1951, and returned to the hospital August 27, 1951, because of petechiae, fever and bloody stools. At that time the abdomen was protuberant, the hepatosplenomegaly persisted and thrombopenia was again found. Chest X-ray indicated massive infiltrations which had the appearance of miliary tuberculosis. The chest lesions cleared between October 25, 1951, and November 30, 1951. Splenectomy was performed November 15, 1951, (see pathology report below) and the platelet count rose to 210,000 within 4 days, and was 290,000 twenty-six days postoperatively, Table 1. Chest X-ray January 14, 1952, revealed minimal infiltra-

tion of the right lung base, and osteoporosis of the long bones. At this time growth retardation was evident. The infant was released January 31, 1952, somewhat improved following splenectomy.

He had to be readmitted February 6, 1952, because of respiratory infection with otitis media and "rattling in the chest." Chest X-ray February 11, 1952, showed extensive consolidation of the right lung. However, the lung fields were clear to X-ray examination April 28, 1952, and no defects were found in a skull X-ray June 20, 1952. Bone marrow studies revealed increased phasmatocytes and histiocytes June 12, 1952. The infant suffered recurrent infections in the hospital, but improved somewhat and went home August 2, 1952, in poor condition. He was readmitted August 4, 1952, because of fever and nuchal rigidity. Spinal fluid culture revealed gram negative bacilli, a member of the *Coli-aerogenes* group. Death occurred August 8, 1952, at the age of 20 months.

DR. PRICE STEPP: This infant had a chronic progressive disease that was manifested in the first weeks of life and terminated fatally within two years. On the first hospital admission the outstanding signs were thrombocytopenia and hepatosplenomegaly. These signs were present in varying degrees on subsequent admissions and should give a lead to a diagnosis. Among those diseases which give thrombocytopenia and hepatosplenomegaly, I would consider leukemia, Banti's Disease or one of the reticuloendothelial diseases; such as Niemann-Pick Disease, Gaucher's Disease and Letterer-Siwe's Disease.

Leukemia is a good possibility with the thrombocytopenia, anemia, lymphadenopathy and enlargement of the liver and spleen, but on no admission do we find striking abnormality in the number or type of white blood cells, until the final admission when there was a leukopenia. Furthermore, in this age child, I would expect leukemia to lead a more rapid termination than occurred in this case.

Banti's Disease hardly fits the picture though it may produce splenomegaly, thrombocytopenia, leukopenia and anemia. The enlarged liver, short course and absence of ascites and edema are against the diagnosis of Banti's disease.

We then consider the reticulo-endothelial diseases: Niemann-Pick Disease, Gaucher's Disease and Letterer-Siwe's Disease. The signs and symptoms of these diseases would fit this case very well. The early onset,

acute course, hepatosplenomegaly, lymphadenopathy, thrombocytopenia, anemia, leukemia, skin rash, consolidations of the lung described on two admissions which appeared to clear up spontaneously, irritability and growth failure, all of which may be found in Niemann-Pick's Disease, Gaucher's Disease and Letterer-Siwe's Disease. As to which of these diseases we have in this case it will depend upon the type of cells the pathologist has found in the bone marrow studies, lymph node biopsies and autopsy material. I will say Letterer-Siwe's Disease because of the very early onset and the absence of mental deterioration.

DR. A. M. Hand: This white male child was autopsied three hours after death.

Pronounced frontal bossing was present and the anterior fontanelle was patent, measuring 3 x 3 cm. A healed left rectus scar in the abdominal wall measured 11 cm. The regional lymph nodes were enlarged, and the liver edge extended 7.5 cm. below the right costal border in the midclavicular line. The tip of the tongue was ecchymotic but no bleeding was found elsewhere internally or externally. Measurements were as follows:

Part	Measurement This Patient	Normal, Age 20 Mo.
Weight	17 lbs.	19-31 lbs.
Length	71 cm. (28 in.)	82-88 cm. (32-35 in.)
Heart	70 Gm.	56 Gm.
Lungs, Rt.	93 "	83 "
Lt.	84 "	74 "
Liver	770 "	370 "
Spleen	40 " (removed at age 1 yr.)	26 " (normal wt for spleen at age 1 yr.)
Adrenals	7 "	6-10 Gm.
Kidneys, Rt. and Lt.	71 " together	Rt. 43 Gm; Lt. 44 Gm.
Brain	Not weighed	1050 Gm.

Petechiae were present on the epicardial surface and the heart was moderately dilated. The left ventricular wall measured 6 mm. in thickness and was somewhat flabby. Hemorrhages and petechiae were present in both lungs. The liver was pale, but smooth and glistening and pale areas were seen on the cut surface. No hemorrhage was seen in the adrenals. The kidney surfaces were smooth and the parenchyma pouted moderately on the cut surface. The renal cortices measured 5 mm. in diameter and no change was found in the pelvis or ureters. The urinary bladder contained 50 cc. urine. The intestines were free of ulceration or hemorrhage. The brain surface was covered with a thick, green exudate and internally, the ventricles were dilated. The bone marrow taken from lumbar vertebrae 1, 2 and 3 was red in color. Autopsy bacteriological studies

revealed in the heart blood, *Salmonella schoettmülleri*, *Diplococcus pneumoniae* and *Staphylococcus citreus*, and from the meninges *Esch. coli*, *Aerobacter aerogenes*, *Esch. Freundii* and diphtheroids.

Microscopically, the myocardium was not altered. In the lungs, focal areas of fresh intra-alveolar hemorrhage was seen, and many alveoli contained large phagocytic monocytes. The pancreas was free of alteration and no hemorrhage or infiltration were found in the adrenals. The renal tubular cells appeared swollen, pale and in the interstitium focal infiltrations of large histiocytes and small round cells were present. The normal pattern of the lymph nodes was generally replaced by a diffuse cellularity, composed of large histiocytes. The individual cells appearing rather mature and well differentiated.

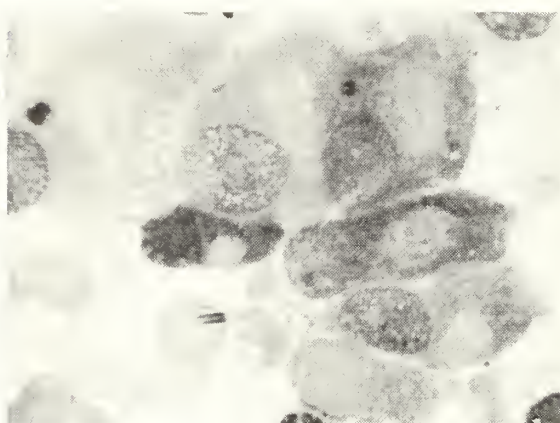


FIGURE 1. Non-lipid Histiocytosis (Letterer-Siwe's Disease). Histiocytes with granular non-lipid cytoplasm.

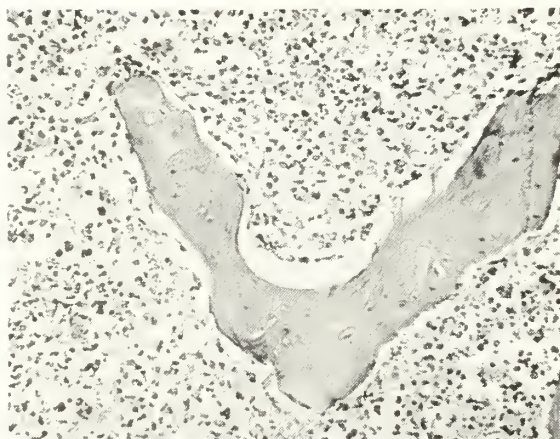


FIGURE 2. Non-lipid Histiocytosis (Letterer-Siwe's Disease). Vertebral bone marrow with replacement of normal marrow by reticulum hyperplasia.

The architectural pattern of the bone marrow (Figures 1 and 2) was greatly altered by the presence of many enlarged cells with pale nuclei and abundant cytoplasm. The erythroid and myeloid elements were decreased in number. The meninges were raised from the cortical surface of

the brain by thick exudate composed of large areas of monocytes, and in other areas of predominantly polymorphonuclears.

At the time of surgical removal, December 15, 1951, the spleen weighed 40 grams and measured 10.5 x 5.5 x 3 cm. (Normal weight of the spleen at age 1 year is 26 grams.) The organ was rounded, swollen, firm and held its shape. On cut surface the reticulum was prominent and the organ was strikingly congested. Microscopically the reticulum was increased and the lymph follicles somewhat reduced in size. No storage type cells were identified. From the microscopic appearance of the spleen a specific diagnosis was not made.

An enlarged lymph node removed surgically revealed hyperplasia of the reticulo-endothelial elements but was not diagnostic.

Discussion

First called "aleukemic reticulosis" by Letterer¹ in 1924, the criteria for the diagnosis of "non-lipid reticulosis" were established by Siwe² in 1933. Abt and Dinenzhaltz³ in 1936 suggested the term Letterer-Siwe's Disease in 1936. The condition is characterized by a proliferation of typical and atypical reticulo-endothelial cells and while any organ may be involved, the liver, spleen, lymph nodes, skin and bone marrow are most frequently involved. The disease in its pure form is almost invariably fatal and in the case at hand the bone marrow involvement was the most striking feature as well as the immediate cause of death which was a terminal purulent meningitis.

The relationship of Letterer-Siwe's Disease, Hand-Schuller-Christian's Disease and eosinophilic granuloma of bone was first suggested by Farber in 1941.⁴ Transitional forms have been reported on a number of occasions and in 1944 Jaffe and Lichtenstein⁵ suggested that the three processes represent the same disease in varying grades of severity. Of considerable interest is a recent case report by Fisher⁶ of a child with a diagnosis of Letterer-Siwe's Disease who responded to antibiotic therapy and later developed lesions characteristic of Hand-Schuller-Christian's Disease. The striking finding was the presence of a paracolon organism of Arizona group.

Final Pathological Diagnosis:

- I. Non-lipid histiocytosis (Letterer-Siwe's Disease)
 - A. Splenectomy (1951)

- B. Generalized lymph node enlargement
- C. Hepatomegaly
- D. Replacement of bone marrow by histiocytes
 - 1. Diffuse subserous petechial hemorrhage
 - 2. Peri-pelvic hemorrhage
 - 3. Focal intra-alveolar hemorrhage
 - 4. Meningitis, purulent (probably due to *Esch. coli*)

- a. Hydrocephalus, internal
- E. Growth retardation

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President's Letter



DR. THOMPSON

I had anticipated discussing another subject with you this month, but with the unexpected response by the various local levels both pro and con, and with the chance of boring you, we are going to talk about The Tennessee

Plan for the care of Veterans again.

What is this Tennessee Plan which is causing such a controversy?

In order that you may answer this question if put to you, the following explanation is offered.

The Veterans Administration through its present facilities (and without elaborate construction of additional facilities at a great expense to the taxpayers) shall care for:

1. Service connected disabilities
2. Tuberculosis
3. Mental illness
4. Chronic illness or domiciliary care cases requiring more than 90 days.

There is no argument about service connected disabilities unless Congress continues its absurd presumptive service connected laws; but that is another story and one we may discuss at length later. The government has assumed the care of tuberculosis, mental illness, and domiciliary care for such a length of time as there is no longer any question but that these are a responsibility of the government, whether veteran or not.

The second part of The Tennessee Plan proposes that a hospital, surgical, and medical policy similar to Blue Cross or Blue

Shield be issued to the veteran who is medically indigent. Medical indigency is determined by Congress on the basis of his net taxable income as set out in his last federal income tax return. This plan then preserves the sacred physician-patient relationship enabling his local physician to treat him at home in the local hospital thereby utilizing hospital beds already available at less cost to the government.

We have been criticized by some that this is socialism and, therefore, should be opposed vigorously, that the individual is not now being cared for by the government and that we are merely opening channels for socialistic medicine. To those who hide behind this thesis let me state that statistics show that at the present time 87 per cent of the patients in VA hospitals are in with non-service connected conditions, on terms as determined by the Administrator of Veteran Affairs at the urging of a Congress that intends to see that these veterans are taken care of. Medicine has been socialized since Hippocrates. That is nothing new. What we do not want is *Federalization* of medicine on the government's terms.

Your House of Delegates at the Nashville meeting instructed your delegates to again present this plan to the House of Delegates of the A.M.A., at San Francisco. We have received assurance of support from other State Medical Societies and from several veteran groups. We hope for and expect your active help.

A handwritten signature in dark ink, appearing to read "John Thompson", written in a cursive style.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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JUNE, 1954

EDITORIAL

THE CONTINUING MORTALITY OF ACUTE APPENDICITIS

The progressive decline in the death rate for acute appendicitis has led to a false sense of security in the face of this condition. This is one of the points made in a recent paper by Boyce.*

In 1900 the death rate for acute appendicitis was 9.7 per 100,000 population; it continued between 9.7 and about 12 for the next decade. It gradually rose to 15.2 in 1925 remaining at this level until 1932 when it began to decline. By 1940 it had again reached 9.8 deaths per 100,000 population and by 1952 was estimated to stand at 1.7 per cent of deaths.

The author goes on to consider the reasons for the 217 deaths per month still occurring in this Country as the result of acute appendicitis. In the first place he blames the health columns in the lay press for some of the carelessness shown by patients who have appendicitis. The columnists either

imply or state that antibiotics have taken the sting out of acute appendicitis. Secondly, he points out that almost all of the papers on the subject of acute appendicitis appear in surgical journals. What is needed, he states, is recapitulation of the subject in journals which are read in the main by general practitioners and internists.

The author has studied the case records of more than 7,613 cases at Charity Hospital, New Orleans, since 1930, having reported his analysis at three different times in these years. In a consideration of appendiceal abscess, he pointed out that the mortality for this complication was 11.7 per cent in the Charity Hospital cases. The reason for deaths in instances of abscess seems to be the expectant treatment of appendiceal abscesses which permits the further complication of its rupture. A variation of this is by the surgeon who, suspecting abscess, employs observation and expectant therapy in the hopes of verifying his suspected diagnosis.

However, the continuing mortality in acute appendicitis is probably contributed to in the main by the atypical manifestations which may be presented in the disease. The characteristic clinical picture of generalized abdominal pain localizing in the right lower quadrant, with nausea and vomiting, mild fever and tachycardia, tenderness and rigidity in the right lower quadrant and a leucocytosis of 10-15,000 is known to all and is not likely to be misinterpreted by the doctor. However, it is estimated that in from 25 to 40 per cent of cases the picture is not so typical.

Boyce makes the observation that in his review of the Charity Hospital cases a large proportion of gangrene, rupture and abscess occurred because the patients did not present the typical or expected clinical picture. Among his 7,613 cases were 284 patients whose initial symptoms were nausea, vomiting, diarrhea and malaise. In others the first symptoms were headache, backache, flatulence, anorexia, chills, urinary symptoms and hematemesis. Atypical pain was localized to lumbar, subcostal or left lower quadrant areas, the groin, leg, right shoulder. Some had urinary symptoms, many diarrhea, others only pain, and not infrequently the disease seemed of dietary origin.

*Boyce, F. F.: The Role of Atypical Disease in the Continuing Mortality of Acute Appendicitis, Ann. Int. Med. 40:669, 1954.

Low fever is not necessarily a part of appendicitis as has been commonly taught. Fifteen per cent of the Charity Hospital cases had no fever on observation. Less than two-thirds had the "characteristic" 99-101°; some had high fever. The mortality was over 10 per cent in the 1,108 cases in which the temperature was 102° or more. Though localized tenderness is probably the most constant finding in acute appendicitis, 126 cases did not show it and the mortality rate in this group was 27 per cent. Abdominal distension as an early sign of appendicitis was accompanied by a 32 per cent mortality. Rigidity often is missing especially in the older patients. In the Charity Hospital series the white cell counts varied from 2,000 to 39,050 per cu. mm.; only 41 per cent of the counts were within the expected 10-15,000 WBC range.

Not only is the doctor confronted at times by an atypical picture of acute appendicitis but he also must think of its presence concurrently with some other disease process. To pick out this acute process in the face of other known disease often takes the best of clinical astuteness.

Antibiotics have led to the mismanagement of acute appendicitis. A suppurative process is not to be tampered with by the use of antibiotics. Among the last 1,172 of Boyce's cases, 121 had had antibiotics or sulfonamides pre-operatively either in ignorance of the correct diagnosis or as a matter of poor judgment after a diagnosis was made. This permits complications such as abscess and gangrene to develop.

Acute appendicitis in childhood offers an especially difficult diagnostic problem. It so often occurs during the course of some other disease, an exanthem for instance, or especially as related to some dietary indiscretion. Diarrhea is a very prominent symptom in the young. The delay in diagnosis in children is demonstrated by the fact that only 34 of 236 children under age 13 reached the hospital within 12 hours.

Acute appendicitis in old age may be even more atypical. The failure of its recognition is indicated by a mortality of 12 per cent (2.7 times the rate for the whole series) in the Charity Hospital cases above age 39 years. U. S. Bureau of Census figures for

1952 indicate that 1,530 of 2,500 deaths from acute appendicitis occurred after age 54 years. In the older group the acute characteristics tend to be lacking with a more gradual and prolonged course of initial symptoms, slow localization of pain if at all, frequently abdominal distension, often no well demonstrated rigidity, and lesser levels of fever and leucocytosis. The diagnosis had been missed in 15 per cent of the Charity Hospital cases.

Fortunately, acute appendicitis is infrequent during pregnancy but if present offers diagnostic difficulties needing differentiation from pyelitis and, late in the pregnancy, from labor pains. Pain and tenderness are localized higher than usual and muscle spasm is not so prominent.

Traumatic appendicitis due to abdominal trauma occurs but is unusual. It is to be remembered that such may occur following blows to the abdomen. *Obstructive appendicitis* is characterized by sudden onset of colicky pain and vomiting, with delay in the development of fever, increased pulse rate and leucocytosis. Gangrene and rupture may occur early.

Often we as physicians become complacent in the sense of familiarity with the more common diseases unless rudely shocked by diagnostic error at intervals. The possible danger of being too familiar with acute appendicitis has stimulated this editorial comment.

R. H. K.



AN AWAKENING

A long and relentless fight by The Tennessee State Medical Association, spearheaded by Dr. Harrison H. Shoulders, is bearing fruit in a nation-wide awakening to the threats to freedom imposed by the VA Medical Care system as now operated.

The system unmistakably threatens the freedom of the veteran-patient, his physician, and the survival of civilian hospitals. Dr. Shoulders' voice has long inveighed against these threats. He is now being heard, and heeded, in medical circles which previously have turned a deaf ear.

At about the time this JOURNAL hits your desk here in Tennessee, a showdown fight will be developing at the AMA convention

in San Francisco. The fight will be between sponsors of The Tennessee Resolution for VA Medical Care and the present policy of the AMA, adopted a year ago in New York.

Dr. C. M. Hamilton of Nashville, one of our three delegates, has presented The Tennessee Resolution to the proper AMA committee with request for favorable action. The important and significant thing about the situation now is that Tennessee no longer stands almost alone in a position that is morally right and economically sound.

This flocking of friends, attested by letters and resolutions, resulted from the work of our Committee on Veterans Affairs, expanded and enlivened a year ago in Memphis. The strong blow for recognition of our position was struck when the committee mailed a packet of information, argument and philosophy to 3,400 physicians who receive regularly the "Secretary's Letter" from Dr. George Lull, General Manager of AMA. We obtained this mailing list from the AMA and circularized it with the Committee's material six months ago.

The Committee Chairman immediately began to receive telegrams, letters and telephone calls from throughout the country. Some of the messages were surprising and therefore most encouraging. They came from states which hitherto had opposed The Tennessee Resolution.

In Iowa, for example, the State Medical Association adopted a resolution reversing a previous stand against the Resolution and assuring support in 'Frisco. A delegate from Massachusetts telegraphed Dr. Hamilton that he would be honored to co-sponsor The Tennessee Resolution.

For the first time, veterans' organizations have begun to show a definite interest in the plan advanced here for the medical care of their members. Hospital administrators, recognizing the menace to survival of the institutions they operate, have offered their support in the fight.

Whether we win or lose in San Francisco, this fact is established: The Tennessee State Medical Association has asserted itself as leader in the campaign to obtain a veterans' medical care program that will guarantee freedom to the veteran, to his doctor, and to our civilian system of medical care for ALL citizens. E. L. B.

TENNESSEE CAMP FOR DIABETIC CHILDREN

The Tennessee Diabetes Association is the originator and sponsor of the Camp for Diabetic Children. Here is provided an opportunity for the diabetic child to enjoy the experiences of camping with other children under safeguards difficult to assure at the usual children's camps. Since all the campers are diabetics, and personnel skilled in the care of the diabetic patient are at hand, parents and doctors may safely send children to the camp with no fear of their getting out of "regulation" or of developing unrecognized complications. The psychologic aspects are invaluable. Here the diabetic child learns he is not alone in the need of living with certain restrictions. After an experience of living with others having the same ailment, he is less likely to feel sorry for himself and to become better adjusted to life. Through the generosity of public spirited donors a lack of funds need not deprive the diabetic child of having a wholesome experience.

Doctors having under their care diabetic children should read the detailed description of the camp and its activities under *Announcements* this issue.

R. H. K.



SOUTHERN PEDIATRIC SEMINAR

To the general practitioner who wishes review work in Pediatrics and in Obstetrics and Gynecology, and who may be unaware of the calibre of the offering, your editor calls attention to the Seminar at Saluda, North Carolina. For its 34th session some work is also being given in Internal Medicine. The Seminar provides a good faculty, pleasant surroundings for himself and family, an inexpensive postgraduate course and one accredited by the American Academy of General Practice. (See *Announcements* this issue.)

DEATHS

Dr. William R. Rogers, Bristol, died May 1 from a heart attack. Dr. Rogers was a former mayor of Bristol. Aged 79.

Dr. John Y. Wall, Waverly, aged 74, died after a long illness on April 27. He had been in practice in Waverly for 31 years.

Dr. James V. Hughes, Jr., Savannah, died suddenly of a heart attack on April 25 while on a fishing trip. He was 46. He was organizer of the Hardin County General Hospital.

Dr. Perry A. McGinnis, Knoxville, aged 53, on May 3 from a heart attack. He was formerly medical director of the AFL Printing Pressman's Union.

Dr. Edward G. Ahrens, Memphis, died May 5, 1954, after several months' illness. He was 71.

Dr. Percy E. Miller, Tigrett, died May 8, 1954. He was 66 and was a former president of the Tri-County Medical Society.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis and Shelby County Medical Society

The Society met on April 6 to hear the following program. Mr. Robert Pharr discussed "Some Possibilities of the New Educational Television Channel." This was followed by a paper on "Temporal Bone Surgery" by Dr. W. Likely Simpson.

The May 6th meeting was held in the University of Tennessee Institute of Pathology, and the speakers and their topics were: "Cavernous Hemangioma of Liver," by Dr. William L. Northern; "Surgical Treatment," by Dr. Robert Buckinger; "Present Trends in Syphilis Control," by Dr. C. E. Hookings.

Roane County Medical Society

A dinner meeting was held at the Oak Ridge Hospital on May 21. Dr. Robert C. Lynch of the Ochsner Clinic of New Orleans presented a paper on "Carcinoma of the Cecum."

Nashville Academy of Medicine and Davidson County Medical Society

The members were guests of Vanderbilt University Hospital at a dinner on May 11. "The Clinical Use of the Nitrogen Mustards" was discussed by Dr. Allen D. Bass of the Department of Pharmacology and by Doctors Robert C. Hartman and Herbert L. Wineland of the Department of Medicine. "The Most Interesting Cases on Ward 4300" (Pediatric Ward) were presented by Dr. Roy Laughmiller and discussed by Doctors Floyd Denny and Harris D. Riley, Jr.

Knoxville Academy of Medicine

At its meeting on May 18, Dr. Robert Akin gave a paper entitled "Some Present Day Concepts of Moles and Their Relationship to Melanoma."

Chattanooga-Hamilton County Medical Society

A panel discussion on "Abdominal Pain" was presented at the May meeting. Dr. J. M. Higginbotham served as moderator; other panel members included Drs. Harry A. Stone, J. Edward Strickland, Jr., Dewitt B. James, and W. Powell Hutcherson.

Consolidated Medical Assembly

At its May 4th meeting papers were presented by Drs. Jack Farringer and Harwell Wilson of Memphis on "Burns," and "The Acute Abdomen," respectively.

Dyer, Lake and Crockett Medical Society

At a meeting on May 5th the Society passed a resolution urging fluoridation of water supplies for Dyersburg. The fluoridation program at Tiptonville and Ridgely was also presented. Dr. Henry Turner, of the University of Tennessee Medical School was the guest speaker.

NATIONAL NEWS

Financial Aid for Medical Schools

Ways of bolstering finances of the nation's medical schools were discussed at a meeting by Memphis business and professional leaders at the Peabody Hotel on May 7th.

"Unless adequate financial aid is forthcoming, America's medical schools will be forced to lower teaching standards, reduce student admissions, close down or be subsidized by the Federal Government," stated Mr. Colby M. Chester, honorary chairman of the Board of General Foods Corporation.

About sixty Memphis business and industrial leaders responded to the challenge by forming a Memphis committee to supplement work of the National Fund for Medical Education.

"It is just good business for American industry to get behind the National Fund," Mr. Chester said. "No segment of society has as good a stake in our medical schools as industry," he said.

Dr. Stanley Dorst, Dean of the University of Cincinnati College of Medicine and President of the Association of American Medical Colleges, told

the group that funds to support medical colleges used to come from great philanthropic gifts, large foundations, and through public funds for state universities. Dr. Dorst said, "Large philanthropic gifts are no more." Foundations spend primarily for research designated for several projects. Endowments used to pay for fifty per cent of medical school budgets. Now they pay for about seventeen per cent," he said.

Mr. E. J. Ade, Public Relations Director of the National Fund for Medical Education, said that the seventy-nine medical schools in fifty-six cities now need an additional \$28,000 per day to meet their responsibilities.

"We must either reduce the quality of our medical colleges, or appeal for more federal money, or ask private business for support," said Dr. O. W. Hyman, Vice-President of the University of Tennessee Medical Unit and Dean of the College of Medicine.

MEDICAL NEWS IN TENNESSEE

University of Tennessee College of Medicine

The new \$1,373,354 Chemistry-Physiology Building is scheduled to be fully completed by October 27. The building is the first of three to be completed under a \$5,000,000 expansion program.

★

The Atomic Energy Commission has awarded a research grant of \$9,936 to Dr. W. M. Hale, of the Department of Bacteriology to study the effect of gamma radiation on infections and immunity, in the hope of finding some method of circumventing the ill effects of radiation which follow an atomic attack.

★

Dr. Aaron Ganz, of the Department of Pharmacology, has been awarded a \$4,428 research grant by the U. S. Atomic Energy Commission to investigate the role of liver in the distribution of radioactive gold colloids, since it is known that the liver accounts for 90 to 95 per cent of the "uptake" of a given amount of such gold particles injected into the blood stream.

★

Dr. James R. Teabeaut, head of the forensic pathology section of the Armed Forces Institute of Pathology, Washington, will join

the staff of the Division of Pathology and Bacteriology.

Patients at John Gaston Hospital and the research program of Dr. D. B. Zilversmit, physiologist at the University of Tennessee medical units, will benefit from a \$1,000 grant of the Memphis Heart Association.

Vanderbilt University School of Medicine

Dr. William J. McGanity of the Department of Obstetrics and Gynecology has been awarded the Lowell M. Palmer Fellowship effective July 1.

Middle Tennessee Medical Association

The 119th semiannual meeting was held at Lewisburg on May 20 under the presidency of Dr. Ogle Jones of Centerville. The following program was presented:

"Tinnitus" by Dr. Clyde Alley, Nashville; "Office Treatment of Neuroses" by Dr. Eric Bell, Nashville; "Cord Bladder" by Dr. A. Meirowsky, Nashville; "Recent Advances in Radiation Therapy of Cancer of Cervix," by Dr. W. Hamilton, Nashville; "Symposium on the Management of Diabetes in Children" by Drs. E. Wilkinson, D. Odell and A. B. Scoville, Jr., Nashville; "Traumatic Injuries of the Wrist" by Dr. Parker Elrod, Centerville; "General Systemic Manifestation of Asymptomatic Unilateral Kidney Diseases" by Dr. Thomas Frist, Nashville; "Surgery of the Endocrine Glands in Advanced Cancer" by Dr. B. F. Byrd, Jr., Nashville.

Tennessee Academy of General Practice and Knoxville Academy of Medicine

With the co-sponsorship of the Lederle Laboratories these organizations presented a Symposium on Common Problems in Clinical Medicine on June 3. Doctors J. H. Burkhart of Knoxville and W. A. Hensley, Jr., of Cookeville acted as moderators.

"Differential Diagnosis and Management of the Primary Anemias" by Dr. Richard Vilter, University of Cincinnati School of Medicine; "The Management of Massive Hemorrhage from the Upper Gastro-intestinal Tract" by Dr. John D. Stewart, University of Buffalo School of Medicine; "Indications and Contraindications for the Use of ACTH and Cortisone" by Dr. John H. Talbott, University of Buffalo School of Medi-

cine; "Low Back Pain" by Dr. William J. Schnute, Northwestern University Medical School; "The Use and Abuse of the Sex Hormones in General Practice" by Dr. J. Keith Cromer, Consulting Gynecologist, Mouth Alto Hospital, Washington, D. C.; "Helpful Hints on Difficult Deliveries" by Dr. Carl Harris Tafien, Long Island College of Medicine; "Differential Diagnosis and Initial Treatment of Head Injuries," by Dr. Edgar F. Fincher, Emory University College of Medicine.

Polio Immunization

The mass inoculation program for second grade school children is under way in Shelby and Sullivan Counties. Some 3,500 Memphis and Shelby County second graders have already received their second injection. No children will be given the vaccinations without written permission from the parent or guardian.

Committee on Trauma

The Annual Meeting of the Tennessee Regional Committee on Trauma, American College of Surgeons, was held in Nashville April 20, attended by Doctors M. Moore, Jr. (Chairman), D. Nance, M. J. Stewart, J. M. Aste, D. Eve, Jr., G. B. Hubbard, S. Prevo, E. M. Stevenson, G. K. Carpenter, B. O. Garner, G. L. Inge, B. H. Marshall, R. C. Robertson, B. Douglas, T. K. Young.

A progress report was given on the Committee's attempt to secure legislation for the regulation and training of ambulance attendants in the State. Since the bill failed to pass the last General Assembly a new approach is to be used. This entails contacting the "Undertaker's Association" in the hope that it will sponsor the program with our Committee acting in an advisory capacity.

The Railroad Surgeon's Association have a revised plan and program for training in first aid which appears to be superior to that of the American Red Cross. It was suggested that this plan be used in training ambulance attendants if and when the cooperation of the morticians is obtained.

The Committee heard a report of the Joint Medical and Legal Committee dealing with the doctor's exemptions from testifying in Civil Courts, and the giving of depositions and supplying medical reports. This was endorsed by the Trauma Committee and its support was offered to the Joint Medical and Legal Committee.

A report from the National Trauma Committee which met in January indicates that the Trauma Manual and Fracture Manual will be revised. Dr. J. E. M. Thompson reported on a new "all purpose splint."

The Sectional Meeting of the American College

of Surgeons is to be held in Nashville in April, 1955, and will sponsor a Symposium on Management of the Automobile Accident Victim, and a Symposium on Cancer, including bone tumor.

The Committee recommended the recent "Report of the Committee for the Study of Immunization as Prophylaxis for Tetanus and Gas Gangrene." (This appears in the abstracts of this issue.)

New members who are proposed for the State Trauma Committee must be nominated by the Local Chairman, clear the State Executive Committee, the Regional Chairman and from there the recommendation will go to the National Committee for consideration. Only members of the American College of Surgeons are permitted to hold full membership in the State Trauma Committee; however, non-members may hold associate membership.

The members of the present executive committee were re-elected in their respective offices: Dr. Moore Moore, Jr., Chairman; Dr. Dana Nance, Vice-Chairman; and Dr. Marcus J. Stewart, Secretary.

Hill-Burton Grants in Tennessee

Division of Hospital Facilities, FSA, reports that as of April 30th one new project had been approved for Hill-Burton grants in the State of Tennessee. The project is LaFollette Hospital at LaFollette; 43 beds added, estimated total cost: \$535,600; approved federal share: \$260,000.

Status of all Hill-Burton hospital construction in Tennessee, including the above, is as follows:

Completed and in Operation: Forty-three projects at a total cost of \$31,557,704, including federal contribution of \$12,537,346 and supplying 2,038 additional beds.

Under Construction: Sixteen projects at a total cost of \$21,393,103, including federal contribution of \$5,777, 583 and designed to supply 638 additional beds.

Approved, But Not Yet Under Construction: Seven projects at a total cost of \$5,147,004, including \$2,194,120 federal contribution and designed to supply 534 additional beds.

PERSONAL NEWS

Dr. T. B. Yancey of Kingsport has been appointed by Governor Frank Clement to the State Board of Medical Examiners. He is now president of the Board of Medical Examiners.

Dr. John W. Bradley, Chattanooga, has been elected a member of the Board of Directors of the American Pharmaceutical Company.

Dr. Kenneth L. Haile of Cookeville has been a lecturer in the Institute of Family Relations series at Tennessee Polytechnic Institute.

Dr. Ogle Jones of Centerville is the President-Elect of the Tennessee Academy of General Practice. He will be installed at the next annual meeting of the Tennessee State Medical Association in 1955.

Dr. Vanis Pennington has opened an office for the practice of medicine in Chattanooga.

Dr. Frank Moore, Jackson, has been appointed by Governor Frank Clement on the State Commission to study Alcoholism.

Dr. William K. Swann addressed the American Association for Thoracic Surgery at its recent meeting in Montreal on the subject of cardiac surgery.

Dr. Stewart Lawwill, Jr., Chattanooga, is associated in practice with his father, Dr. Stewart Lawwill, Sr.

Dr. Williford Eppes has joined Dr. Breck Wyatt in the practice of internal medicine in Jackson.

Dr. K. M. Kressenber, Pulaski, has accepted the presidency of the Giles County Chapter of the Muscular Dystrophy Association of America, Inc.

Dr. W. A. Hensley, Cookeville, is a newly elected vice-president of the Tennessee Academy of General Practice.

Dr. Henry B. Brackin, Jr., has joined his father, Dr. Henry B. Brackin, Sr., in the practice of neuropsychiatry in Nashville.

BOOK REVIEW

Review of Physiological Biochemistry. By **Harold A. Harper, Ph.D., Los Altos, Calif.** Lange Medical Publications, 4th Edition, 1953. Pages 319.

This text is a valuable and convenient book of reference since it contains brief and up-to-date summaries of practically all phases of Biochemistry. The information is presented in a clear and readable form. Illustrations, charts and diagrams are fairly generously used to clarify some of the more complicated interrelationships and structural chemical formulae of the compounds under discussion are presented. There is an adequate index. Very few specific references to the literature are included but a suggested list of textbooks, other reviews, and journals for further general reading and study is included.

The book will find its greatest usefulness for the busy clinician who wants to bring himself up-to-date quickly on the salient points of current biochemical information in regard to some particular clinical problem. Because of the lack of specific references to the literature it will prove less satisfactory for the person who might wish to use this review as a starting point for a more intensive study of some special field.

A. S. MINOT.



Stress. Third Annual Report, 1953. By **Hans Selye, M.D., and Alexander Horava, M.D., Montreal, Canada.** Acta Inc., 1953. 637 pages.

The authors continue their annual and great contribution in integrating and coordinating the rapidly accumulating literature on Stress, the General Adaptation Syndrome, including the adaptive hormones (the corticoids, ACTH, etc.), and diseases of adaptation (hypertension, periarteritis nodosa, etc.). This volume, the third of integrated reviews, brings to a total a classification of 20,271 references in the field.

In this annual review, the authors have included *special reviews* of three special subjects:—Hypertension; Neurophysiological Aspects of the Control of ACTH Secretion; and the Effects of Bilateral Total Adrenalectomy in Diabetics with Advanced Vascular Disease.

The integration and coordination of the world's literature is covered in two main sections:—(a) The General Physiology and Pathology of Stress including definition and considerations of the stress concept and the stressor agents and adaptive hormones; (b) The Special Physiology and Pathology of Stress; concerning the action of stress and the adaptive hormones on targets, not only as organs, but also as metabolic changes and the resultant reactions as resistance to damage, inflammation and the like.

The stress concept concludes that the reaction to systemic or local stressor agents is dependent upon the function of the hypophysis-adreno-cortical system which may either enhance or inhibit reactions against the stressors. Selye believes that derangements of this adaptive mechanism are the

factors which permit what he calls the diseases of adaptation. The authors go on to consider the diseases of adaptation in broad terms.

The authors are to be complimented upon the annual analysis of the world literature of the interesting aspects of disease having to do with the hormonal factor in disease. This is so important in the application of the hypophysis-adrenal (ACTH and cortisone) chain in present day medicine.

R. H. K.

★

PLACEMENT SERVICE

The placement service of The Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 322 Doctors Building, Nashville 3, Tennessee.

Locations Wanted

A 26 year old, married, physician, M.D. Tennessee, 1949, draft exempt, desires associate relationship for general practice and general surgery.

LW-46

★

A 34 year old, married physician, Protestant, graduate University of Cincinnati, 1943, priority 4, desires clinic, preferred community 10,000 up, General Practice. Available March 1, 1954.

LW-51

★

Married physician, Protestant, graduate University of Tennessee, at present in U. S. Air Force. Desires general practice in or near large city. Available September.

LW-71

★

A 26 year old, married physician, Catholic, graduate Louisiana State University, 1952, priority 4, desires clinic for general practice in community 4-10,000. Available immediately.

LW-73

★

A 28 year old, married physician, Protestant graduate University of Tennessee 1949, three years training in general surgery, priority 4, completing residency June 1954, available July 1, 1954. Desires community 20-100,000.

LW-76

★

A 38 year old, married physician, Catholic, priority 4, graduate Hahnemann Medical College, Philadelphia, Pa., GP-Surgery, community preferred, 5-10,000. Available two months after selection of community.

LW-77

★

A 31 year old, married physician, Protestant, graduate University of Louisville 1953, priority 4, desires clinic, would consider partnership basis, general practice, community preferred 1500-2500. Available July 1, 1954.

LW-79

A 32 year old, married physician, Hebrew, graduate University of Iowa College of Medicine, Board Certificate held in Urology, priority 4, desires clinic, assistant or associate, community 25,000-500,000. Available July 1, 1954. LW-83

★

A 31 year old, married physician, Catholic, graduate Ohio State University 1947, recently discharged from service, desires general surgery in community 10,000-50,000. Available September 1st.

LW-84

★

A 29 year old, married physician, three children, Southern Presbyterian, graduate Bowman Gray School of Medicine 1946, inactive Status List. USNR; Lt. (j.g.), MCR, Specialty Internal Medicine. Would consider clinic, assistant or Associate. Community preferred 25,000-50,000. Available June, 1954.

LW-86

★

A 31 year old, married physician, Protestant, graduate Harvard Medical School, eligible for American Board of Surgery, Military status, 5-A, Naval Medical Corps 2 years. General Surgery, desires clinic, community 10,000 or larger. Available August 1st.

LW-88

★

A 30 year old, married, physician, Protestant, graduate Washington University School of Medicine, Priority IV, 2 years residency training-internal medicine; 1 year Gastroenterology (all approved). Desires clinic, assistant or associate, community 30,000 or more. Available July 1st.

LW-91

★

A 32 year old, married physician, Lutheran, graduate Temple Medical School, priority IV, Certified by American Board of Surgery, desires Associate first choice, clinic second, in community 50,000 to 100,000. Available May 1.

LW-94

★

A 29 year old, married, physician, Protestant, graduate George Washington University, priority IV, desires general practice in community 3,000-10,000, preferably with open staff hospital. Would consider if in small general practice clinic hospital. Available July 1.

LW-96

★

A 42 year old, married physician, Catholic, graduate Tulane, Draft exempt. Specialty Internal Medicine, desires clinic, assistant or associate in community 50,000 or over. Available August, 1954.

LW-98

★

A 33 year old, single physician, Protestant, graduate Faculty of Medicine, McGill University, Montreal, Canada. Priority IV. Medicine and surgery, clinic, assistant or associate in community 5,000-10,000. Available July 15.

LW-100

★

A 32 year old, married, three children, graduate Vanderbilt University, Certified by American Board of Psychiatry and Neurology. Priority IV. Interested in private, partnership or group practice.

LW-102

A 31 year old, married physician, Catholic, graduate University of Tennessee, Priority IV, specialty training three years general surgical residency. Community 25,000 or more. Available immediately. LW-103



A 32 year old, single, Episcopalian, graduate Louisiana State University. Desires general practice in community 40,000 to 100,000. Available July 15, 1954. LW-105



A 32 year old, married physician, Protestant, graduate Duke University, Priority IV. Would consider clinic, assistant or associate. Desires general practice in community 4,000 to 10,000 preferably East or Middle Tennessee. Available July 1st. LW-107



A 32 year old, married physician, graduate University of Illinois, Board eligible in internal medicine, completing period of service in Navy. Prefers clinic. Community greater than 6-8 thousand. Available October. LW-109



A 32 year old, married physician, Protestant, graduate University of Michigan, Diplomate American Board of Surgery. Category IV. Would like association in community 20,000 to 150,000. Available immediately. LW-112



A 26 year old graduate University of Tennessee, married, Priority 5-A. Desires general practice partnership or alternate, industrial or salaried position o.k. Community 5,000 to 10,000. LW-116

ANNOUNCEMENTS

Tennessee Camp for Diabetic Children

The Tennessee Diabetes Association is sponsoring for the third year the Tennessee Camp for Diabetic Children. The two previous seasons have been an overwhelming success. Last year 54 diabetic children from Tennessee and six other states enjoyed full camp activities for two weeks. This year's season will be August 2-15. During these two weeks these diabetic children, boys and girls between the ages of 7 and 16, will combine wholesome healthy camping with complete diabetic care.

The camp is to be held again at Camp Glancy, Sequatchie, Tenn., about 40 miles from Chattanooga. The Little Sequatchie River has been dammed to make a swimming pool, with an area for non-swimmers and beginners.

The campers are housed in cabins, twelve to a cabin, with two counselors in each cabin. There is a main dining room and recreation hall, an arts and crafts cabin, and naturally an infirmary,

where the campers take their insulin daily, and where urine tests are run four times a day.

Activities of the camp include swimming, under the direction of a Red Cross life guard, hiking, fishing, boating, horseback riding, softball, croquet, archery, riflery, and other sports. Handicraft, folk and square dancing, and dramatics are also part of the program. There is a nightly vesper service, and an evening camp fire each night, with a variety of programs. Movies are shown twice weekly. Cookouts are held twice a week.

Diets are carefully planned well in advance, and correspond to the campers' diets as submitted by their physicians. Two nurses are at camp constantly, and the Executive Director of the camp, Dr. Albert Easley of Chattanooga, visits the camp daily. Blood sugars are run once a week, and urines four times a day. All the children learn to administer their own insulin.

The camp is staffed by experienced personnel, some of whom are diabetics. In addition there are a number of junior counselors who are diabetic, in training for full responsibilities during future camping seasons.

The cost of the camp is \$80 for the two weeks. This includes insulin and arts and crafts materials. *No child is denied the privilege of attending the camp because of inability to pay.* Last year 39% were full paying campers, 24% were part paying campers, and the remaining were free. This is made possible through the generosity of individuals and civic groups throughout the state. Anyone desiring to contribute to the support of the camp is asked to send contributions to the Tennessee Diabetes Association Camp Fund, care of Dr. Albert S. Easley, Medical Arts Building, Chattanooga.

Initial plans have been made and steps taken to purchase, build, and equip a permanent Tennessee Camp for Diabetic Children, which will probably be ready for the 1955 season. These plans are under the direction of Dr. Albert S. Easley, permanent Executive Director, and the other members of the Board of Directors of the camp: Dr. Robert F. Ackerman, Memphis, president of the Tennessee Diabetes Association; Dr. Phil Thomas, Knoxville; Dr. Jean Murray Hawkes, Memphis; Mrs. Edgar Butler, Memphis; Mr. Kenneth Kasschau, Oak Ridge; and Mrs. Gordon Street, Chattanooga.

JEAN MURRY HAWKES, M.D.

Secretary-Treasurer

Tennessee Diabetes Association



Southern Pediatric Seminar

For its 34th session the following courses are being given:—(1) Pediatrics and Internal Medicine, July 12 through 17; (2) Pediatric Course July 19 through 24; (3) Obstetrics and Gynecology, July 26 through 31. Each course has a \$25.00 tuition fee. The faculty of 61 teachers consist in the main of members of faculties of Southern medical

schools, through numerous practicing specialists not on school faculties dilute the more academic approach. The course is given at Saluda, North Carolina—in the mountains, providing pleasant surroundings away from cities and enjoyable to the families. More information can be obtained from M. A. Owings, Saluda, North Carolina.



The Department of Otolaryngology, University of Illinois College of Medicine, announces its basic science course in otolaryngology offered by its affiliated hospitals. This combined postgraduate course and residency will begin its 1954-55 session

on July 1, 1954. Other openings occur throughout the year. Residencies are available at either the Research and Educational Hospital or the Illinois Eye and Ear Infirmary, or a continuation of the training program may be arranged for the Veterans Administration Hospital at Hines.

A stipend is offered on the following basis:

First year residency	\$1,320 annually
Second year residency	1,620 annually
Third year residency	1,920 annually

Application forms are available on request to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12.

(Continued from Center Spread)

"4. 'I haven't lost a case yet which was treated by these drugs.' This reason is a poor justification for the indiscriminate use of these drugs. Nature has provided us with a very good and most elaborate mechanism to resist these diseases and it usually works well. I know of no report of anyone who died, who had on his death certificate 'Common cold' as the cause of death.

"5. 'It is my personal opinion that these drugs are helpful.' Most doctors who see a fairly large office practice are not able to obtain carefully recorded objective data which will stand the test of careful scientific scrutiny. Much of their opinion is based on subjective data given by the patient, and is therefore of no more scientific value than the numerous newspaper testimonials, such as that praising Hadacol for instance. Doctors giving this reasoning would be closer to the truth by accepting the conclusions of studies done by men who employ the true scientific method.

"6. The sixth reason I have not heard given in a statement, but after consideration of the fact that the usual dose of penicillin costs 8 cents, and the usual fee for its injection is \$3.00, I should like to ask the question, just how much does this fact contribute to so much penicillin being used?

"Sometimes the treatment of disorders with penicillin borders on the ridiculous. These are a few disorders I have seen which had received previous penicillin therapy: Infantile scurvy, thrush of the mouth, fibrous tumor of the sternocleidomastoid muscle, autovaccination, and psychogenic vomiting. It behooves us as doctors to reach for some differential diagnostic ideas before we reach for the penicillin needle.

"If the indiscriminate use of antibiotics should continue, let me ask these questions as food for thought: (1) Will there develop in the future a new bacteriological kingdom which will be pathogenic for mankind? (2) Will the present pathogenic microorganisms become completely resistant to the antibiotics now in existence? (3) If this occurs, will new and effective antibiotics be discovered? (4) Will the incidence of sensitivity to these drugs continue to increase until their use will be hazardous? I'm sure I do not know the answers to these questions, but I am aware of the bacteriological trends of our time. Of this I am sure, science has given us some useful tools in the antibiotics, and I firmly believe that it would be far wiser to exercise considerable thrift with our present antibiotic bank account lest the future bring a therapeutic depression."

Clearview

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Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

JULY, 1954

Number 7

Symposium on Pancreatitis: Its Diagnosis and Management

Pancreatitis remains a baffling disease as regards its etiology and pathogenesis. Its therapy and management remain as controversial. The management of the acute attack medically and interval regimens are quite universally agreed upon. But the surgical attack upon the problem has been diverse with no approach to unanimity of agreement among surgeons as to either indications, methods or results.

DIAGNOSIS*

J. W. ADAMS, JR., M.D., Chattanooga, Tenn.

There are two types of pancreatitis,—acute interstitial and acute hemorrhagic.¹ The first entity occurs rather commonly; often there are repeated attacks.

Acute Hemorrhagic Pancreatitis

Acute hemorrhagic pancreatitis was first described in 1889 by Fitts. This disease is most frequently seen in obese persons past middle age, and women are affected twice as commonly as are men.

Symptoms begin with alarming suddenness, often following the ingestion of a meal. Usually the patient is seized with an agonizing pain of indescribable severity, centering in the upper abdomen or lower chest. Extreme nausea is present, though vomiting is not likely to be a prominent early feature of the clinical picture.

On *examination* the severity of the pain is immediately apparent because the patient resists making the slightest movement for fear of increasing the already unbearable agony. Respiratory movements are entirely thoracic in type, shallow and rapid; the skin assumes a grey pallor; the pulse is markedly increased, and the blood pressure is likely to be reduced. The board-like rigidity of the abdominal musculature is more spectacular than that caused by any other disease, a ruptured peptic ulcer not excluded. The pain persists in all its severity, being only

partially relieved by the administration of sizeable doses of morphine.

The *diagnosis* can usually be established on the basis of the above clinical picture, though serum amylase determinations have their value in the questionable cases, since markedly elevated levels are almost invariably encountered early in the course of this disease. Approximately one-third of these cases terminate fatally, death usually occurring in the first or second week.

Acute pancreatitis, by virtue of its variable clinical course, is readily confused with acute cholecystitis, perforated peptic ulcer, diverticulitis, intestinal obstruction, coronary occlusion, and mesenteric thrombosis. At times, there is no assured method of distinguishing between these various possibilities. The instance of correct diagnosis in acute pancreatitis will parallel,—(1) the index of suspicion of its presence on the part of the physician, and (2) the frequency with which serum and urinary amylase determinations are made early in the presence of acute upper abdominal pain. The presence of severe pancreatic necrosis early in an attack is suggested by the dramatic intensity of the subjective symptomatology and the relative mildness of the physical findings.

Pathology. When the pancreas is exposed, either at autopsy or at operation, it might be described as being "shot to pieces." It shows many areas of hemorrhage, it is

*Read before the Tennessee State Medical Association, April 19, 1954, Nashville, Tenn.

crumbling and friable so that it cannot be removed by the surgeon, who must content himself with draining the area. Depending upon the stage in its progress, hemorrhage, necrosis, or actual suppuration may be found. The peritoneal fat in the neighborhood is flecked with small, whitish-yellow, opaque, and firm areas that look like bits of soap, and in fact they are much like soap. The escape of lipases from the destroyed pancreas saponifies the neutral fats of the adipose tissue.²

Pathogenesis. No single theory of pathogenesis of acute pancreatitis appears applicable to all cases of this disease and, consequently, numerous explanations of the origin of the acute pancreatitis are accorded recognition in various quarters. The recent classification of Siler and Wulsin emphasizes the complexity of the problem.³

1. Reflux of bile into pancreatic ducts resulting from obstruction of the ampulla of Vater by:
 - a. Calculus (Oddi)
 - b. Spasm of sphincter of Oddi
2. Obstruction of pancreatic ducts by:
 - a. Pancreatic calculus or ampullary calculus
 - b. Tumor, inflammation (edema, fibrosis)
 - c. Epithelial metaplasia in small ducts
 - d. Surgical ligature
 - e. Duodenal diverticulum
3. Infection.
4. Vascular Factors.
5. Trauma:
 - a. Accidental
 - b. Surgical
6. Miscellaneous:
 - a. Reflux of duodenal contents into pancreatic ducts
 - b. Alcoholism
 - c. Anaphylaxis

Acute Interstitial Pancreatitis

Acute interstitial pancreatitis, also known as *chronic relapsing pancreatitis*, occurs rather commonly. Often there are repeated attacks. In this condition the pancreas feels firm, because of edema, minimal fibrosis, and minimal inflammation. No fat necrosis is present. This entity does not eventuate into acute hemorrhagic pancreatitis; neither

does it lead to chronic pancreatitis nor to pancreatic calculi. Cattell and Warren state, "In our present state of limited knowledge regarding the etiology of inflammatory lesions of the pancreas, it is wise to regard the cause of chronic relapsing pancreatitis, in its initial stage at least, as identical with the causes of acute pancreatic edema and acute pancreatic necrosis. Thus, chronic relapsing pancreatitis must be considered as a continuation or a progression of acute pancreatitis, differing in the important respect that an additional factor or factors are operative which insure recurrent insults that ultimately lead to persistent disease attended by chronic symptoms and permanent physiological disturbances."⁴

Pathogenesis. The condition occurs almost twice as frequently in males as females and is unusual before twenty years of age. Obesity at the onset of chronic pancreatitis is less common than in acute pancreatitis, and as the morbid process progresses, weight loss becomes marked in the chronic form of the disease. Alcoholism is associated with a significant percentage of cases of chronic pancreatitis which are observed at autopsy. Trauma is an uncommon but definite cause of chronic relapsing pancreatitis. An indirect injury which results in fracture of the pancreas with division of the duct of Wirsung will cause obstruction of the pancreas distal to the injury and will lead to characteristic manifestations of chronic relapsing pancreatitis. Disease of the biliary tract is not considered to be a significant contributing factor. The role that infections play in the etiology of chronic pancreatitis is not known.

Course. It is important to bear in mind that the disease is characterized clinically by chronicity, relapse, and progression. Thus, the precise clinical picture at any particular point in the natural history of any individual case may vary tremendously.

Pathology. In a consideration of patients who have been proved to have chronic relapsing pancreatitis, it has been shown that there are four types with a varied pathological picture:—(1) the diffuse type, in which the entire gland is involved, has long been recognized on surgical exploration as chronic pancreatitis; (2) chronic pancreatitis with

multilocular cystic changes; (3) chronic pancreatitis with pancreatolithiasis or calcinosis, and (4) localized chronic pancreatitis, secondary to trauma. Of these the most interesting is the type with pancreatolithiasis, which deserves separate consideration. *Pancreatolithiasis* represents the final pathologic stage in the progression of chronic relapsing pancreatitis. The pathogenesis of pancreatolithiasis is unknown but precipitating factors appear to be,—(1) obstruction, (2) stagnation, (3) infection, (4) fibrosis, and autodigestion with fat necrosis. The stones may occur at any point or be distributed diffusely along the ductal system. The most common site of localization is in the duct of Wirsung within two to four centimeters of the ampulla of Vater. Frequently these stones can be demonstrated by the X-ray.

Early in the disease the gland is enlarged and firm and somewhat pale in appearance. The limits of the gland are indistinct and peripancreatic edema is present. Later, as the disease progresses, the pancreas becomes larger and more indurated. The body and tail of the pancreas become rounded and the tail becomes blunted. The pancreas becomes fixed to the surrounding structures and loses its limited mobility. Not infrequently a very firm gland is mistaken for a carcinoma and on gross inspection frequently may not be differentiated from a carcinoma of the pancreas.

Symptomatology. Although it is true that there is no clear cut clinical picture of chronic relapsing pancreatitis, it is equally true that the disease has many clinical and laboratory features which permit an accu-

rate diagnosis if the pancreas is borne in mind and investigated in instances of atypical upper abdominal pain. Upper abdominal pain is a predominant symptom of chronic relapsing pancreatitis and is usually severe. Early in the disease it is episodic, occurring with greater intervals of freedom than is usually observed in biliary colic. Later the pain becomes more constant but continues to manifest exacerbations of extreme intensity. The pain is essentially epigastric in location with reference to the back and the left hypochondrium. Nausea and vomiting may appear before the onset of pain, but usually occur after the distress has become firmly established. Diarrhea and steatorrhea occur and may alternate with bouts of constipation.

The significance of laboratory findings in chronic relapsing pancreatitis has been overemphasized. During acute exacerbations in the early course of the disease the serum amylase may be elevated but in the more severe cases no such change occurs. Except for cases of pancreatolithiasis, X-ray and gastro-intestinal series are not considered of significant import to warrant their continued use.

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MEDICAL MANAGEMENT*

R. C. KIMBROUGH, JR., M.D., Knoxville, Tenn.

Dr. J. E. Berk⁹ has remarked that the success of conservative therapy in pancreatitis depends entirely upon the intelligent selection and application of the treatments we have available to us. As will be shown there are many suggestions to be gleaned from the literature. There are a few gen-

eral considerations that should be reviewed before the particular items are discussed.

Careful and continuous observation of the patient is of primary importance. Determination of blood pressure, pulse and temperature at two hour intervals should be made and charted, and at the same time the general appearance, the abdominal signs, and the renal output should be checked. Careful calculations in the administration of

*Read before the Tennessee State Medical Association, April 19, 1954, Nashville, Tenn.

fluids must be made to assure adequate intake not only of the fluids themselves but of electrolytes and certain necessary food-stuffs. Regular, periodic reassurance that adequate levels of electrolytes are maintained should be sought from the laboratory. So should the number of white cells per cubic millimeter, and their differential count be determined successively. Even after encouraging signs appear that the acute phase is being overcome, constant vigilance must be kept against recurrence.

So much for generalities.

In the following paragraphs we shall discuss,—(1) the control of pain; (2) rest of the gastro-intestinal tract; (3) combat of shock; (4) replacement of fluids, foods and electrolytes; (5) prophylaxis against, or treatment of, infection; (6) post acute and chronic regime.

Pain

The acute pain itself causes spasm which not only adds to the pain again, but leads to increased intrapancreatic pressure which may rupture the acinae into its own tissue to produce either a necrotic or hemorrhagic state. The attack upon the pain should exclude morphine or any other narcotic which tends to throw the sphincter of Oddi into spasm. However, Prabstein² feels morphine is not contraindicated, and Elman³ even suggests that it be used intravenously for what he terms dramatic results. Neither makes it clear in what dosage it might be used, or whether he considers it only as a heroic measure. Most observers suggest,—(1) Demerol in dosage of 50 mg. to 100 mg.⁹ subcutaneously every three to four hours, (2) procaine hydrochloride¹⁰ 10 cc. of a 1 per cent solution intravenously given "with caution," (3) in absence of shock the nitrites as nitroglycerine 1/100¹⁰ to 1/50⁵ gr. sublingually, or amyl nitrite (a wary eye kept toward blood pressure drop), (4) atropine 1/60 to 1/120 gr.^{8,10} subcutaneously every four to six hours or Banthine^{2,9,10} or tetraethyl-ammonium chloride 200 to 500 mg.⁸ I.V., (5) sodium phenobarbital^{8,9} 120-180 mg. subcutaneously or paraldehyde⁸ intramuscularly and, lastly, (6) epidural block of thoracic 6-11,^{8,9} or bilateral splanchnic block with 20-30 cc. of 1 per cent procaine hydrochloride or vagotomy. Paravertebral

block of thoracic 8-10 has been suggested but Backus et al.⁸ feel that this is the inferior procedure. It is the general consensus of opinion that both the epidural and the splanchnic block are beneficial over and above the relief of pain because of, (a) the reduction of spasm and (b) an arrest in production of digestive fluids, both in the pancreas and liver, and (c) as an aid in the absorption of edema.

Rest of the Gastro-intestinal Tract

Complete bed rest and complete rest of the gastro-intestinal tract are desirable simultaneously with the relief of pain.

Since the drugs which relieve pain do so by paralysis of the gut or sphincters, those discussed under relief of pain are the ones applicable here. A regime of nothing by mouth, and continuous or intermittent gastric suction, down to the pylorus should be instituted at once.

Shock

As early as possible in the inauguration of any treatment looms the imperative problem of combat of shock. Whole blood, or plasma, glucose or saline, or glucose with saline are urgent. If, however, shock is not present the choice of fluids may be toward relief of dehydration from vomiting and its continuation from the suction. Prabstein,⁷ who appears to have a low regard for the seriousness of acute pancreatitis, feels that usually neither suction nor intravenous fluids are necessary. The more numerous and recent studies^{8,9,10} incline toward the feeling that these measures are not only desirable but compulsory. Arkin¹⁰ feels that the minimum duration of the suction-parenteral fluid regime should be four days. Backus⁸ and associates feel that its maintenance should depend on the reduction of physical evidence of inflammation, the trend of the total white cell and differential count and the recovery from shock. After blood or plasma the fluid next in desirability is glucose¹⁰ in saline covered by insulin if necessary. The total fluid intake per twenty-four hours should be from 2,500-3,000 cc., as long as nothing is taken by mouth and suction is maintained.

Replacement Therapy

To elucidate further upon supplements to

this basic glucose-in-saline fluid intake, it is necessary to also touch upon the aid the laboratory determinations of certain blood elements can offer. Each estimate could determine for the therapist the need for supplementation. As the laboratory procedure is named, suggestions will be made for the use, in the treatment, of that element which seems needed.

(1) *Blood sugar* levels, as might be anticipated, are almost always high. The coverage of each 50 grams of glucose with 10 units of regular insulin should suffice. Successive determinations should guide the further use of insulin as progress or improvement occurs.

(2) Low *blood calcium*^{8,9,10} is encountered after protracted vomiting or sustained suction. Low blood levels of calcium produce skeletal muscular spasms. The calcium should be given intravenously, as 20 cc of calcium gluconate with daily repetition when blood levels show its necessity.

(3) Low *potassium*^{9,10} may be encountered for the same reason as the low calcium. Too low a blood potassium level injures the myocardium, while one too high will damage the kidney. With successive determinations of the potassium level this electrolyte can be administered if need be as potassium chloride or phosphate in 3 gram doses per day.

(4) *Chlorides* are needed by the body having suction applied, vomiting or diarrhea. Four grams of sodium chloride are needed per day. This requirement will be fulfilled if glucose in saline is given as the basic fluid.

(5) *Amino acids* may fall below the normal blood level and over a period of days their deficiency should be made up. Elman³ suggests 100 mg. daily as being adequate.

(6) The estimate of *blood amylase* is a good check as to the progress of the disease. The initial high blood amylase level drops within first 72 hours in most cases of acute pancreatitis.

(7) The *sedimentation rate* is another important laboratory test that should be repeated at regular intervals. Arkin¹⁰ uses its return to normal as one of his criteria for discontinuation of complete bed rest.

(8) Supplements of certain *vitamins* may

be desirable. Adequate daily doses are as follows: vitamin C, 1 gram daily; B₁, 10 milligrams daily; riboflavine, 5 mg. daily; niacinamide, 150 mg. daily. Others, such as vitamin K, B₁₂ and folic acid may be desirable.

(9) Arkin feels that a daily check of the CO₂ combining power should be kept up.

In addition, there is the antitryptic² factor to be considered. A healthy pancreas produces it and it seems to diminish the tendency toward the hemorrhagic type pancreatitis. Recently, it has been made synthetically from the soybean. If this factor is available the patient should be given its benefit.

Arkin¹⁰ insists that not only daily checks of the blood sugar, blood amylase, blood calcium, blood potassium, CO₂ combining power, and sedimentation rate are a "must," but the two hour checks of blood pressure, pulse and temperature a real necessity. Moreover, he maintains that until the sedimentation rate is normal and all evidence of inflammation has disappeared, one must be constantly alert to an exacerbation of the acute phase.

Infection

Although it is by no means of less value because of its place in order of this discussion, there is the consideration of use of antibiotics as prophylaxis against, or as treatment of infection. They are universally advocated. Penicillin is recommended in doses of from 1,200,000² units to 2,400,000³ units a day; streptomycin³ 0.5 to 1.0 grams every eight hours; dihydrostreptomycin¹⁰ 0.5 gram every twelve hours, and Terramycin³ 250 mg. twice a day intravenously. ACTH⁹ has not proved helpful in the acute phase although cortisone¹ 100 mg. along with other shock therapy has been thought to speed recovery.

Subsequent Management

As evidences of the recovery accumulate through physical findings, and reduction of temperature, and the successive improvement of laboratory findings, the parenteral fluids and the suction can be gradually discontinued and replaced by mouth feedings. These must start with one ounce hourly of doses of warm tea, then albumin water, ce-

real gruels and fruit juices. Next fat free broth and jello may be added. Finally, the permanent diet of this individual is reached. It must be a low fat, high carbohydrate, high protein one. A second permanent factor must be added,—complete abstinence from alcohol.

All acute inflammations which are not fatal follow one of two roads. One is to recovery, the other to chronicity. With strict diet and attention to general hygiene there may be no recurrence and no apparent chronicity. When the course is to the chronic, however, recurrence of acute symptoms appear periodically. Other signs of a chronic pancreatitis are steatorrhea and diabetes. X-ray examinations must be made for calcification or stone formation.

The acute exacerbation of chronic pancreatitis is said by Comfort¹ to be sometimes aborted by complete fasting. When the symptoms appear the treatment is identical with that outlined for the initial acute phase.

Beside the low fat, high protein, high carbohydrate diet and avoidance of alcohol, the subject is offered only more or less symptomatic therapy. If hyperglycemia is present, as it is apt to be, insulin of course is indicated. Logan² feels that to insure adequate amounts of carbohydrates at all times the urine should not be kept sugar free. It is thought that pancreatin, enteric coated, in doses of from 6-10 grams⁴ daily will not only control the steatorrhea but will also help prevent fatty degeneration of the liver. Available iron, choline and supplemental vitamins are widely used. Constant care must be taken to detect advent of pancreatolithiasis or carcinomatous degeneration.

In pancreatic disease surgery is usually to be avoided. Indeed, Warren⁵ considers that various unrelated surgical procedures have precipitated acute pancreatitis through

mechanical injury to the gland, its blood supply or ducts. Elman³ insists that even the expected 50 per cent mortality of acute pancreatitis is raised by surgical intervention, either by chance or planned. There are some instances when surgery, if not desirable, is feasible or urgent:¹⁰ (1) when the inflammatory process, as indicated by persistent elevation of temperature, cannot be controlled by medical treatment; (2) when peritonitis is evidenced by distention of lesser peritoneal cavity; (3) with increasing icterus; (4) with retroperitoneal involvement as indicated by discoloration of loins; and (5) indications of formation of cyst or fistula.

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SURGICAL MANAGEMENT*

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The surgical management of pancreatitis overlaps the medical management. The treatment as outlined by Dr. Kimbrough is utilized during any acute phase of the disease, and surgery is seldom employed until a quiescent or stationary stage is reached.

The surgical treatment employed for pancreatitis remains in a controversial state. There has as yet been no unanimity of opinion among the students of the disease as to the etiology of pancreatitis. Indeed, the evidence is that there is a multiplicity of mechanisms for the production of the disease. It is factual that there are various stages and degrees of severity of the disease. These variables in etiology and severity have led various writers to be proponents of one or another of the several surgical maneuvers that have been utilized.

The surgical maneuvers applicable to this disease fall into two main groups, the indirect attack and the direct attacks.

Indirect Attacks

I. *Biliary tract operations.* Often biliary tract disease, cholecystitis, cholelithiasis, and choledocholithiasis, singly or in combination, occur concomitantly with pancreatitis. Quite obviously this condition must be treated as well as the pancreatitis. The literature reports many instances, and it is true in our experience, that there may be no recurrence of pancreatitis after cholecystectomy for stones. This is especially true after choledocholithectomy. It is often true that pancreatitis exists in the person who does not have biliary tract disease. Let me say in this connection, however, that a normally functioning cholecystogram without stone shadows is not *prima facie* evidence of absence of such pathology.

Combined with the treatment of biliary tract disease, prolonged drainage (that is, several months to one year) of the common duct with a T-tube has been employed with reportedly good results. Dr. Cattell employs a long limb T-tube which projects into

the duodenum. Strangely enough, complications such as cholangitis or fibrosis and stricture formation are not reported by him. It seems to me that T-tube drainage will have accomplished its mission within a very few weeks and that its presence longer than that time would invite persistent infection and scarring. Especially do I feel this way concerning a tube projecting into the duodenum. If it is anticipated or theorized that such prolonged drainage is indicated, then it is incumbent upon me to create some permanent internal drainage of the biliary tract using one of the methods to be subsequently mentioned.

On the basis of the common channel theory of the origin of pancreatitis, diversion of the biliary flow by cholecystenterostomy or choledochenterostomy has been utilized. The proponents of this procedure consider it superior to sphincterotomy in that this operation with its complete diversion eliminates any possibility of bile reflux into the pancreatic ducts. It also, by utilizing a long defunctionalized limb of jejunum by the Roux Y-technic, reduces the hazard of intestinal reflux through a patulous sphincter of Oddi to create cholangitis.

Sphincterotomy, a much less complicated procedure for relieving biliary back pressure and in turn regurgitation of bile into the pancreatic duct, has been widely used, and many users report excellent results. Doubillet and Mulholland popularized the use of this procedure. I shall make additional comments about it when we have completed the enumeration of other operations used by other operators.

II. *Diversion of the intestinal flow.* Diversion of the intestinal flow from the duodenum is applicable whenever there is any form of duodenal obstruction distal to the ampulla of Vater. Another theoretical consideration is the diversion of the flow to avoid the stimulation to pancreatic activity created by the gastric juices. Such a diversion of the gastric content also avoids the induction of sphincter spasm due to the acidity of these juices. This diversion may

*Read before the Tennessee State Medical Association, April 19, 1954, Nashville, Tenn.

be accomplished by gastro-enterostomy, pyloric exclusion, or gastric resection. Our feeling about these procedures is that they are not a sound approach to pancreatitis *per se* and should be utilized only if gastric or duodenal disease exists which in itself creates an indication for one of these procedures.

III. *Operations on the autonomic nervous system.* Thoracodorsal sympathectomy, splanchnicectomy, and celiac ganglionectomy have been used for pancreatitis. These operations function mainly as a relief for pain to avoid the more hazardous direct attacks on far advanced pancreatic disease. They have their own hazard of masking other acute surgical lesions that may arise in the abdomen.

Vagotomy has a different basis for its use. Proponents of vagotomy work on the hypothesis that pancreatitis has a large element of psychogenic origin in its etiology which creates an increased tone in the pancreatic duct. In the presence of this increased tone any hyperactivity of the gland increases the intra-ductular pressure to the point of rupture of one of the ramifications of the duct. This in turn creates the pancreatitis. Vagotomy serves to eliminate such spasm and also suppress the activity of the pancreas.

Direct Surgical Attacks

I. *Drainage of cysts.* Drainage of the pseudo-cysts (which may be necessary prior to any other approach on recurrent pancreatitis) can be accomplished by external drainage or marsupialization. Internal drainage may be accomplished by anastomosis of the cysts through the intestinal tract. Some object to this procedure on the basis of a hazard of intestinal contents entering the cyst. If Roux Y-anastomosis with a long defunctionalized loop of the jejunum is used we think it is much more comfortable and just as safe as marsupialization. In a "burned out" pancreatitis no further treatment may be needed.

II. *Lithectomy.* Lithectomy is seldom a feasible procedure, as the disease process is more extensive than the mere presence of a few removable stones.

III. *Pancreatic resection.* Failure of less

radical measures has led to resection of the pancreas in more advanced cases. Distal resection for cysts or for pancreatitis confined to that portion of the pancreas to the left of the superior mesenteric artery is least formidable of any resection. It can be executed without too much difficulty. It should be undertaken however only if the disease process is well confined to this distal portion of the organ.

Pancreaticoduodenectomy has been accomplished by a few operators for severe disease in the region of the head and neck of the pancreas. This procedure and total pancreatectomy are most formidable ones and are reserved for those instances of pancreatitis where lesser procedures have failed.

Comment

Now, back to sphincterotomy. We have used this procedure in recent years whenever operative attack is made for pancreatitis. If biliary tract disease is present this is corrected and then the sphincter is exposed transduodenally and divided. In some instances we have done a plastic division of the sphincter, that is, we have sutured the margins of the common duct to the divided duodenal mucosal margin. In no instance have we brought any form of T-tube or other splint through the sphincter into the duodenum. We have had excellent results with this maneuver with only one instance of recurrence of symptoms. This individual has not been cooperative enough to report for amylase determinations when having pain, but the pain she reports sounds very much like that she experienced preoperatively when the amylase was significantly elevated. It is true that these individuals, some of whom have had biliary tract disease, might have been relieved by the correction of that biliary tract disease alone.

Cattell and Warren have experienced failure with sphincterotomy and they now expose both the main pancreatic duct and the accessory pancreatic duct and probe them for any stricture formation. If strictures are present they are dilated and an attempt is made to show a free communication between the two ductal systems. These ob-

servers are no doubt encountering more advanced disease than we are, as they also report instances in which they have had to resort to pancreatic resection.

We have not seen cholangitis result from sphincterotomy, and neither do I know of the actual demonstration of any stricture formation that has occurred following sphincterotomy. This operation is so simple when compared to choledochojunosotomy that we feel sphincterotomy is the

procedure of choice for eliminating hypertension in the biliary tract.

I intend to continue to use this procedure until such time as cholangitis or stricture formation are proved to be sequelae or until a differentiation can be made as to the etiologic origin of the disease in the specific case at hand. Once the latter is established perhaps a more appropriate treatment can be applied.

Heart Force Effects of Sympathomimetic Amines as a Basis for Their Use in Shock Accompanying Myocardial Infarction. Gazes, P. G., Goldberg, L. I., and Darby, T. D. *Circulation* 8:883, 1953.

This article is timely in view of the wide use of pressor amines for treatment of shock accompanying myocardial infarction. Most previous investigators advocating the use of such therapy have based its effectiveness on the peripheral vasoconstrictor action of the amines. This report is based on, (a) clinical studies in 14 consecutively treated patients in severe shock accompanying myocardial infarction and, (b) laboratory studies conducted on unanesthetized dogs. Results of this investigation demonstrates that although l-norepinephrine is generally classified clinically as predominantly a pressor amine, it also has a powerful augmenting action on the contractile force of the heart and may thus be beneficially used in shock associated with either (a) failure of the heart pump or (b) peripheral vascular collapse with resultant further decrease in coronary flow. Most authorities feel that both central and peripheral failure contribute to the shock-like picture and, therefore, l-norepinephrine or an amine with similar action is recommended. These authors demonstrated effects considered to be due to an increase of the contractile force of the heart in all cases in which congestive failure was present. Similar results were obtained in the animal experiments. On the other hand, neosynephrine was shown to largely exert its effects peripherally. Based on these clinical and experimental observations, these investigators recommend use of l-norepinephrine or an amine with similar action (i.e., Wyamine) in cases of shock in whom congestive failure is a complication. They would reserve the use of neosynephrine (and Vasoxyl) to those cases with peripheral vascular collapse alone. The method of administration of l-norepinephrine was 4 mg. in 1,000 cc. of 5% glucose in distilled water, rate of flow being determined by the level of systolic blood pressure, which was maintained below 120 mm. Hg. (Abstracted for the Middle Tennessee Heart Association by Frederic E. Cowden, M.D., Nashville.)

Cat scratch disease (non-bacterial regional lymphadenitis) is being frequently recognized in the Nashville area. It has been identified in all parts of this Country. The authors have selected four cases to illustrate the clinical manifestations and variability in pathologic findings. This may lead to a more common awareness and recognition of a new clinical entity.

CAT SCRATCH DISEASE

R. H. KAMPMEIER, M.D., and O. A. COUCH, JR., M.D.,* Nashville, Tennessee

In 1947 a patient presented herself to one of us (R. H. K.) with fever for which no immediate cause could be found, to be followed by the development of axillary lymphadenopathy. The appearance of two dusky pruritic papules at the site of a cat scratch on the wrist gave rise to speculation as to the relationship of these to the systemic symptoms. However, one was not convinced that these symptoms and signs constituted a clinical syndrome. In discussing this picture with Dr. J. C. Peterson he raised the question of whether this could be related in any way to Parinaud's conjunctivitis.† A search of the literature could provide no confirmation of this thought. Text-books on veterinary medicine and booklets from the U. S. Department of Agriculture shed no light on the syndrome.

In 1950 papers on cat scratch disease began to appear prominently in the French literature.¹ Greer and Keefer² described the first case in the American literature in 1951. Daniels and MacMurray³ published

papers that same year and subsequently on "Cat Scratch Disease: Non-bacterial Regional Lymphadenitis."

It was Dr. Daniels who kindly furnished the antigen with which to do a skin test in our case of 1947. This was done in March of 1953. A positive reaction almost six years after infection thus confirmed the relationship of this woman's puzzling illness to a cat scratch before the syndrome of cat scratch disease had been established.

Case Reports

Case No. 1. (V.U.H.-163793). J.P.J., a 37 year old white woman, owner of a pet shop, visited the office on August 25, 1947, complaining of a feeling of fever daily for about 2 weeks. The patient had a chill the night before coming to the office. She took her temperature and found it to be 102°. There was some upper abdominal discomfort but no worse than in the past. (She had been under observation for some time with recurrent mild bouts of cholecystitis, upper abdominal discomfort, nausea, icterus and acholic stools.)

The examination was negative. She had a white cell count of 6,500 with a differential count of 65% polymorphonuclears, 1% eosinophils, 23% lymphocytes and 11% monocytes. No malarial parasites were seen. Blood drawn for an agglutination test for brucella was subsequently reported as negative.

On August 29 the patient was seen again. The only new symptom was that of some pain in the lumbar region. She had had no fever for the 2 days following the first visit, but in the past 2 days again had had fever.

On examination again nothing remarkable was found. She called attention to two pinhead sized papules on her left wrist. Her temperature was 101°. A chest film was negative. The white cell count was 10,700.

The patient was next seen on September 3. She had had no fever for 3 days, but had had night sweats. She complained of headache and aching in the legs. She had found her temperature to be 101° at noon of this day. At 4 p.m. I found it to be 102°.

Examination showed for the first time two palpable lymph nodes in the left axilla. The liver

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†Earlier that same year (February, 1947) in his pediatric practice, he had encountered a case of Parinaud's conjunctivitis with enlargement of the pre-auricular node but without fever or systemic symptoms. In September, 1948, this boy's brother developed an ulcer on a finger with enlargement of an epitrochlear node. Both boys played with cats. In 1952 he did skin tests on these boys with antigen supplied by Dr. Worth Daniels, both giving positive reactions. (Dr. Peterson and Dr. R. M. Larsen had jointly observed an instance or two of non-suppurative lymphadenitis following scratches by sick cats.) In the last several years Dr. Peterson has found a dozen instances of Parinaud's conjunctivitis or of cat scratch disease on the Pediatric Service of Vanderbilt University Hospital, about half of which have been verified by positive skin tests. (Personal communication.)

edge was palpable and the tip of the spleen questionably so. The white cell count was 15,100 with 81% polymorphonuclears, 2.5% eosinophils, 9.5% lymphocytes and 7% monocytes. A search for malarial parasites again was negative. Blood was obtained for agglutination tests for the typhoid group and for brucella. These were reported later as negative.

On September 17 the patient reported that she had been afebrile (she had taken her temperature daily) until the morning of that day. She had had a "sore throat" the day before and complained of a sense of "tightness" and fleeting pains in the chest, aching of the left shoulder and arm.

The patient presented a temperature of 101°, a flushed face, conjunctival injection, some redness of the right tonsillar pillar and slight tenderness under the jaws. The two nodes in the left axilla now were definitely larger, each being about 1.5 cm. in diameter, and tender. Over the backs of both shoulders were blotchy red areas which did not fade on pressure. The white cell count was 14,400; agglutination tests for typhus were found to be negative.

On the following day, September 18, the temperature was 101.5°; she was coughing a great deal and felt weak. No nodes other than those in the left axilla were remarkable.

She was admitted to Vanderbilt University Hospital on September 19 for further study. We had learned from the patient that she had been scratched by a cat on the volar surface of the left wrist on August 10. (The date was certain. The cat was suffering from diarrhea, and the day of the scratch was the same as that upon which she took the cat to a veterinarian, whose bill attested to the date.) Two keloid-like papules about 2 mm. in diameter remained at the site of the scratch. We now saw them become red at the time of fever; at such times they itched. We speculated about a fungus or other type of unusual infection. Other than the lymphadenopathy no other findings of interest were noted.

Laboratory Studies. Several white cell counts ranged from 9,200 to 12,900. The differential counts showed polymorphonuclears of from 56 to 73%, lymphocytes of from 22 to 41% and monocytes of from 0.5 to 2.5 per cent. The sedimentation rate was 41 and 45 mm. Total serum proteins were 6.25, albumin 3.88 and globulin 2.37 Gm. per cent. The Kahn test was negative. Blood cultures were negative. An agglutination test for tularemia was negative; agglutination for brucella was reported as positive 1:320 once and negative several days later. A heterophile agglutination test was negative.

Hospital Course. The temperature ranged between 100° and 102° for the first 4 days in the hospital and then dropped to normal levels. Penicillin (30,000 units per injection) was given every 3 hours beginning on the fifth day, when the temperature had already become normal.

On September 23 the skin lesion of the wrist was removed for biopsy. The pathologists report

was as follows: *Gross Specimen*—A 1.0 cm. circular piece of skin with two 1.0 mm. nodules near its center. The nodules were slightly elevated and on cut surface appear yellowish and seem to extend about halfway through the epidermis. *Microscopic sections* showed a segment of stratified squamous epithelium; the malpighian layer is thicker near the center of the section, and in this region there is an increase in mitoses in the basal layer. Large numbers of focal areas of necrosis, large infiltrations of lymphocytes, polymorphonuclear leukocytes and some fibroblasts are present throughout the derma. Most of this is located near the epidermis. No tubercles are seen, no giant cells, no inclusion bodies or parasites. Section stained with Verhoeff's stain show no fungi.

Subsequent Course. The patient was seen at intervals after discharge from the hospital. She had no subsequent temperature levels of over 99.2°. By October 3 the axillary lymph-nodes had shrunk to pea-sized diameters, and were impalpable by October 10.

Intradermal Test. On March 17, 1953, 0.1 cc. of cat scratch antigen, made available through the courtesy of Dr. Worth Daniels, was injected intracutaneously. At 48 hours a wheal, measuring 1 x 1.5 cm. surrounded by a zone of erythema about 1 cm. in width, had developed at the site of injection. At 5 days the whole area about 2 x 2 cm. was infiltrated and whiter than the surrounding skin. This demarcated the preceding area of wheal plus erythema.

The second case represents one in which the diagnosis of lymphopathia venereum might readily have been considered. The pathologic picture in the excised node was so suggestive of a tuberculous process that it raised a question of either the validity of the positive skin test with cat scratch antigen or its positive reaction coincidental to tuberculous adenitis. Only repeated negative search by culture and guinea pig inoculation for the acid-fast organism, negative tuberculin tests, the spontaneous rapid healing of the sinus and the antigenic response to an extract of the excised node (see Case 4) finally convinced us that tuberculosis was not the cause of the adenitis.

Case No. 2. (V.U.H.-229801), H.B.R., a 56 year old white sharecropper, visited the Vanderbilt University Hospital Medical Clinic on December 29, 1953, because of a "kernel" in the left groin.

Present Illness. Two weeks prior to the clinic visit, he had noted a swelling in the left inguinal region and had been given penicillin by his doctor. The swelling continued and he developed pain in the region of his pelvis and in the left inguinal region. Aureomycin was then given without any apparent benefit. He believes that he had a little fever on one or two occasions but

had no chills or night sweats. There were several cats around the house, but he denied being scratched by any of them. He had not had any contact with rabbits for five months. Squirrels had been cleaned recently, but he did not handle them, and those who had did not become sick.

Physical Examination. The patient was well developed and well nourished. A small uninfected scratch was present on the medial surface of the left leg just above the level of the sock. There was also a small brownish-red papule in the left popliteal region which the patient states was once like a "pimple." The patient was quite certain that this lesion developed subsequent to the appearance of the enlarged nodes. In the left inguinal region were tender, enlarged nodes with redness and warmth of the overlying skin in a 13 x 6 cm. area. (Fig. 1.) No enlarged nodes were

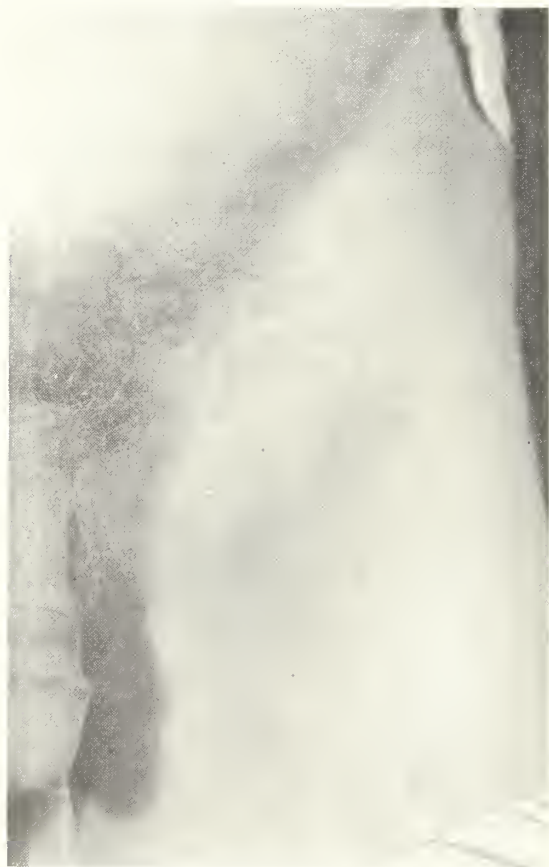


FIG. 1. (Case 2.) Swelling of the sublingual nodes.

felt elsewhere and the rest of the physical examination was negative.

Laboratory Studies. The urine was negative. The white cell count on admission to the clinic was 5,650 and on the following day was 7,600, with a differential count of 76% polymorphonuclears, 20% lymphocytes and 4% monocytes. The Hgb. was 13.0 Gm. and the PCV was 44.8. The sedimentation rate was 4. On January 4, 1954, the total serum proteins were 7.2 with albumin

3.9 and globulin 3.3 Gm. per cent. On December 29, 1953, the Kahn and V.D.R.L. tests for syphilis were negative. On January 7, 1954, agglutination tests for typhoid and paratyphoid A., brucella, tularemia and O.X.-19 were negative. That for paratyphoid B was positive in a 1:10 dilution.

Clinical Course. Because cat scratch disease was suspected, on December 31 the patient was given an intradermal test with cat scratch antigen (supplied by Dr. Worth Daniels). On January 2 the test site showed a wheal 1.0 x 0.5 cm. with a zone of erythema of 3 mm. surrounding it. This was considered to be a positive reaction. Later the patient noted some itching at the site of injection. At this time he was started on a 5 day course of Aureomycin 250 mg. four times daily which was completed without any clear-cut effect on the clinical course. On January 5 a Lygranum skin test and control were done and were read as negative on January 7. On January 12 there was less redness over the sublingual nodes, but they seemed to be somewhat larger though not fluctuant. By January 14 the skin tests were beginning to fade.

On January 21 the patient felt feverish and complained of increased pain in the region of the nodes for the previous two to three days. The nodes were non-fluctuant and the patient was admitted on the Surgical Service. The urine was again negative. The white cell count was 6,200 and the Hgb. 13.1 Gm. On January 22, purulent material was aspirated from the involved region. An incision was made and the nodes were removed. They were matted together and necrotic, and contained yellowish-greenish material. The saphenous vein was involved in the mass of nodes and was excised with the nodes.

Pathological examination of the material was reported as follows: The gross specimen consisted of a lymph node which measured 2 x 2 x 1 cm. Microscopic examination revealed the greater portion of the architecture of the node to be destroyed and to be replaced by a granulomatous reaction. Throughout the node there were large areas of hyaline-like degeneration which in some areas tended to be more necrotic in appearance. Clustered about these areas were epithelioid cells and giant cells which resembled Langhans giant cells. No focal abscesses were seen. The predominant cell beyond the epithelioid cell is a lymphocyte. (Fig. 2.) It was felt that these findings were most suggestive of tuberculosis.

Smears for acid-fast bacilli were negative and cultures were later reported as negative.

On January 28, following discharge from the hospital, both ends of the incision were well healed but in the center there was an area of erythema. Six cc. of serous fluid were obtained by opening the center of the incision. The patient was again placed on Aureomycin therapy, 250 mg. every 3 hours for three doses and then 50 mg. every three hours for 20 doses.

On February 2 the left inguinal incision was obviously infected, and all of the sutures removed

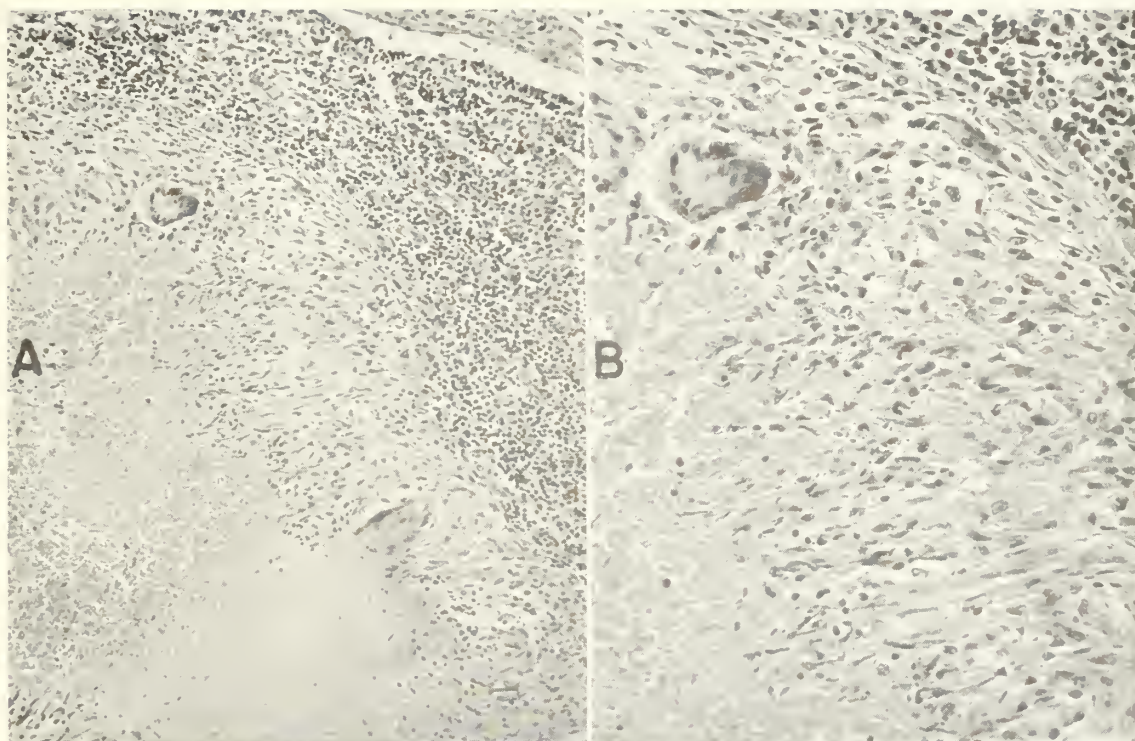


FIG. 2. (Case 2.) A. Lymph node showing necrotic zone surrounded by fibroblasts, large mononuclears and giant cells. The resemblance to a tuberculous lesion is evident. B. Higher power view of one of the giant cells and the surrounding granulomatous reaction.

and about 10 cc. of clear yellow fluid were withdrawn from under the skin. The patient was sent home and returned on February 16. At this time he was given a tuberculin test with 1:1000 O.T. which was negative. An X-ray film of the chest was negative. On February 25 smears from the walls of the draining sinus were negative for tubercle bacilli. On March 9 a tuberculin test using 1:100 O.T. was negative. On this date pus was aspirated from a small area just below the operative scar and smears made of this material were negative for tubercle bacilli. Some of this fluid was injected into a guinea pig, which subsequently showed no evidence of tuberculosis. Cultures showed a hemolytic streptococcus, though were negative for acid-fast bacilli.

On March 9 the wound was healing but there was slight induration at the lower portion which was not fluctuant. By April 27 the lesions had healed well; there was no drainage. However, there was a slight non-fluctuant swelling medial to and below the incision which the patient said pained him occasionally. On this date 0.1 cc. of antigen made from the pus aspirated from him was injected intracutaneously into his left forearm. In 48 hours this showed a papule 0.5 cm. in diameter surrounded by a zone of erythema 1 cm. in diameter. This was considered a positive test.

On June 24 the patient was last seen. He was feeling well and working full time as a hay-baler. Examination of the left inguinal region showed the incision to be well healed, without

drainage and with a minimal amount of induration.

After our presentation of the previous case at the Staff Rounds of the Vanderbilt University Hospital Medical Service, Dr. Clarence Thomas suggested we re-evaluate the case record of a patient who was admitted to the hospital as his patient in 1945 and diagnosed as having encephalitis of unknown cause.

Case No. 3. (V.U.H.-142099), M.A.L., a 16 year old white girl, was admitted on February 23, 1945, unconscious since a convulsion the previous afternoon, 17 hours before.

Present Illness. About 5 weeks previous to admission the patient had noted a small sore on the inner aspect of the left thigh which gave no particular trouble. Two weeks after the appearance of the sore a swollen tender node appeared in the left groin, remaining so and had become painful on walking in the last 3 to 4 days before admission. For a couple of weeks the mother had thought the girl to be listless and pale, though she continued in her school, extra-curricular and social activities as usual, attending a dance 5 days before coming to the hospital.

On the day before admission she had gone to school but the mother, having been notified that her daughter was late in attending classes and

seemed listless, got her and took her to the office of Dr. Clarence Thomas. Here she gave her history and, laughing and joking, was prepared for examination. After getting on the examining table she cried out and had a generalized convulsion with tongue biting. After this isolated muscular twitching continued. At home she aroused a bit during the night and vomited. She voided involuntarily several times.

Past History. There was no history of previous convulsions. At age 10 she had been bitten by a dog suspected of being rabid and following anti-rabic immunization developed urticaria and rhinitis following contact with wool, cosmetics, eggs and pork.

Physical Examination. T. 100° (rectally), P 90, R. 18, B.P. 118/70. The patient lay unconscious, with mild Cheyne-Stokes respiration; she resisted slightly in passive motion, there was no muscular rigidity. On the left mid-thigh area was a red healed lesion of the skin, 1 cm. in diameter. The femoral nodes on the left side were enlarged each to about 2 x 3 cm. in size, the lowermost being fluctuant. Axillary, both epitrochlear and left posterior cervical nodes were palpable but not enlarged. Lungs, heart and abdomen were negative. The cranial nerves were intact. The deep reflexes on the left side, both in the upper and lower extremities, were greater than on the right, being considered hyperactive, or diminished on the right side. Babinski reactions were equivocal. There were neither Kernig nor Brudzinski signs.

Laboratory Studies. Urine was negative. There was no anemia. The white cell count was 15,600 on admission, 82% being polymorphonuclears. On subsequent days the count was 6,000 and 8,000 with 70% polymorphonuclears, 19% lymphocytes, 6% monocytes and 5% eosinophiles. Blood Kahn and Wassermann were negative; NPN, fasting blood sugar and serum proteins were within normal limits. Spinal fluid examinations on February 23 and 24 showed no increased pressure, normal dynamics, protein of 36 and 25 mg.%, sugar of 91 and 79 mg.%, cells 4 and 8 respectively and negative Wassermann reactions. Agglutination for *B. tularensis* was negative, heterophile antibody titer was 1:80. Pus aspirated from the fluctuant node was sterile on several media (aerobic and anaerobic); it was inoculated intraperitoneally into mice without any effect on their health. Blood cultures were negative. Spinal fluid was inoculated into the brain of mice which were still well 7 days later. A Frei test was negative. An electroencephalogram showed abnormal activity over the right premotor area.

Clinical Course. On the evening of admission the patient had a seizure of rhythmic flexion and extension movements of the extremities for several minutes. She then yawned and became quiet. Consciousness returned 48 hours after admission, the patient remaining awake some minutes at a time and answering questions. After another 24 hours she remained awake, complained of frontal headache and itching of the left eye. Fever of

101° (rectally) was present for the first 2 days and then reached normal levels by February 27.

The patient was discharged on the tenth hospital day. No diagnosis was established though it was felt by Dr. Thomas and consultants that the patient had a viral lymphadenitis and encephalitis of unknown etiology.

Second Admission. The patient was readmitted for re-examination a month later on April 2, 1945, for a 3-day period.

During the previous month the patient had rested much of the time, complained of occasional dull frontal headaches and pain in her jaws. Dilantin had been prescribed; she had no further convulsive seizures. Appetite had been good. The swollen femoral nodes had caused no inconvenience. There had been no fever.

Physical examination was negative except for two slightly tender nodes in the left femoral region. The lower one presented a small draining sinus surrounded by a 3 cm. area of erythema; the upper one was fluctuant.

Laboratory Studies. The urine was negative except for a trace of albumin. There was no anemia. The white cell count was 4,850 with a differential count of 49% polymorphonuclears, 3% eosinophiles, 43% lymphocytes and 2% monocytes. Sed. rate was 12 mm. Serum proteins were within normal limits. Heterophile antibody titer was 1:40. The EEG showed a pattern suggestive of recovery from cortical damage as compared to the previous one.

Sera were studied for evidence of viral infection at the George Williams Hooper Foundation of the University of California. Serum collected on February 24 failed to neutralize the virus of St. Louis encephalomyelitis. That collected on April 3 failed to neutralize the virus of Western equine encephalomyelitis.

Re-examination. Upon request the patient presented herself on April 15, 1954 (9 years after her last hospital admission) while visiting in Nashville. In the interim she had married, has two healthy children and has been in good health.

At this late date the patient has no recollection of a cat scratch to account for the cutaneous ulcer on the thigh in February, 1945. The mother clearly recalled that a cat lived in the household at that time.

In April, 1954, there was no lymphadenopathy. The subinguinal region of the left thigh showed two adherent scars of about 3 x 8 mm. in diameter ringed with pigment. There was no other lymphadenopathy.

A skin test with cat scratch antigen (supplied by Dr. Worth Daniels) was done. The 48 hour reading showed a pruritic papule 7 x 9 mm. with surrounding erythema of 20 x 27 mm. in diameter. At 72 hours the erythema had increased to an area of 40 x 45 mm.

The following case was observed by one of us (O. A. C.) through the courtesy of Dr. Ira Johnson. This case illustrates the diag-

nostic difficulties of lymphadenopathy in the neck.

Case No. 4. (V.U.H.-229729), B.M.L., a 21 year old white housewife, was admitted to the hospital for biopsy on January 1, 1954.

Present Illness. When first seen on December 24, 1953, she gave a story of swelling anterior to the right ear and in the neck on the right side. The enlargements had appeared about a month before. There had been no chills nor apparent fever. Malaise and slight weight loss had been noted. The swellings had not been red or hot.

Physical Examination. This was negative except for the lymphatic system. At the site of the preauricular node on the right side was a freely movable mass 2.5 x 1.5 x 0.5 cm. in size. In the right posterior cervical chain were 2 nodes 0.75 cm. in size. Small nodes were felt in the axillae and left epitrochlear region. The spleen was not felt.

Laboratory Studies. On December 24, the Hgb. was 12.2 Gm. The white cell count was 5,900 with 60% lymphocytes in the differential count. Heterophile agglutination test showed a 1:14 titer.

On December 29 the white cell count was 11,500 with a differential of 60% lymphocytes, 36% polymorphonuclears, 1% eosinophiles, and 3% basophiles.

Clinical Course. The patient was admitted to the hospital for biopsy of a node from the posterior cervical chain on the right side, because of the question of a diagnosis of lymphoma.

Pathological examination showed the node to be soft, greyish-white in color, with an area of necrosis in the center. Microscopically there was distortion of the architecture of the lymph node with areas of hemorrhage and scarring. There was hyperplasia of the reticulo-endothelial elements. In some areas there were cells of an epithelioid type. There were no giant cells (Fig 3.) The section was reviewed later by Dr. John Shapiro who suggested the pathologic diagnosis of cat scratch disease.

Cultures from the node were negative, including culture for acid-fast organisms.

Histoplasmin skin test on January 8 was positive. A test with PPD No. 1 was negative. Tests with PPD No. 2, half strength, then full strength were done on January 11 and 14 respectively with negative results.

The subsequent clinical course was uneventful.

On June 30 additional historical data was obtained and skin tests with cat scratch antigen were done.

A cat has been in the household all the time, but at about the time the patient became ill a stray cat was about the house for a while. The patient played with this cat also and was scratched by it several times. This cat was found dead, thought to have been killed by a car though there was no evidence of this. Also at about this time, the family pet cat had a "draining sore" on its head.

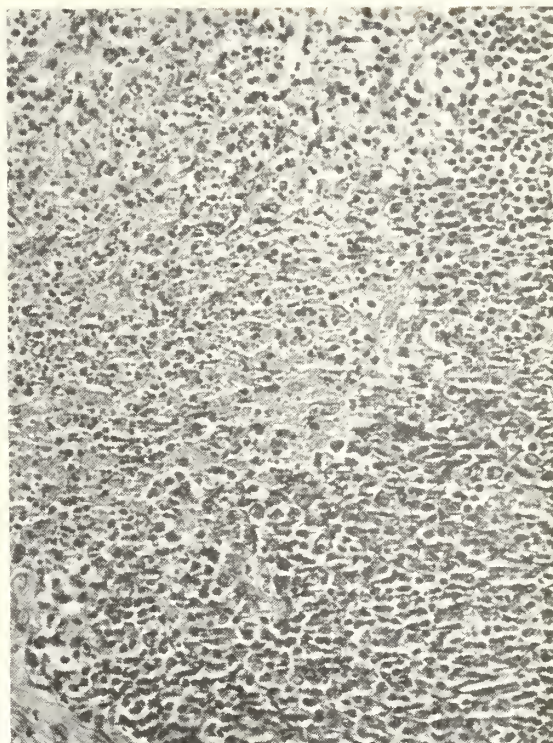


FIG. 3. (Case 4.) Lymph node showing characteristic lesion of cat scratch fever. Focal zone of necrosis and leucocytic exudation surrounded by large mononuclear cells and lymphocytes.

Skin tests were done simultaneously with antigen supplied by Dr. Worth Daniels and with antigen we had prepared from the node excised from the patient of Case 2. The former gave a skin reaction of an 8 x 11 mm. papule with a zone of erythema 22 x 32 mm., the latter a papule of 8 x 8 mm. with an erythematous zone of 22 x 33 mm.

History

It is of interest that the syndrome of cat scratch disease was first recognized and confirmed by American investigators who did not publish their findings. Daniels¹ learned from personal communications that Dr. Lee Foshay recognized an ulceroglandular disease following the scratch of a cat and called it "Cat Scratch Fever." This was in 1932. In 1945 Dr. Franklin M. Hanger and Dr. Harry M. Rose aspirated pus from a suppurative regional adenitis in a case, prepared an antigen which gave markedly positive reactions in Foshay's cases as well as in Hanger who had the disease.

Clinical Picture

Daniels and MacMurray² in their last paper report on a study of 160 cases of cat scratch disease. Of these, 27 cases were

personally observed and studied; the others were reported to them by physicians whom they had supplied with antigen for skin tests. All these cases were found positive. The clinical picture will be described from this analysis of 160 cases, representing 27 states and 8 foreign countries. (Five cases have been reported by Bennett and Melton⁷ in Georgia.)

Sex and Age Incidence. Males and females were equally affected. Most of the patients were under 20 years of age, and a third were less than 10 years of age.

Inoculation. All except 12 of the patients (who could not recall any exposure) had been in contact with cats. A scratch in an area drained by the affected nodes was recorded in 93 instances; five had been bitten. Patients having contact with cats, but not recalling scratches, reported in six instances lesions thought to be insect bites, one each of a prick by a porcupine quill, of sniffing cushions contaminated by cat urine, of a scratch by a rabbit, of an abrasion in cleaning a cat's cage, of a brush burn on a garage floor and of a splinter prick. Twelve patients, denying contact with cats, had in one case handled wild rabbits, in another been scratched by a splinter on a meat crate, in another been pricked by a garden thorn, and in nine had no known inoculation. Of the 160 cases, the historical information in 47 did not permit assumptions as to mode of inoculation. The investigators found 12 epidemics in households involving 26 persons, mostly children, and in all instances there was a family cat.

Primary Lesion. Of the 160 cases compiled by Daniels and MacMurray, one-half of the patients gave a history of a lesion at the site of the scratch or bite; most were on the arms; the remainder on the face and legs. In some the initial lesion was an inflamed scratch, either in its full length or in segments of it. Some lesions were dusky red papules (as in our first case), or multiple, some suggested small furuncles, others insect bites. In the patients who recalled the length of the incubation period to the primary lesion the time was 3 to 14 days. The time elapsing between inoculation and appearance of regional lymphadenopathy

was commonly from 7 to 21 days though periods up to 42 days were recorded.

Lymphadenopathy. The regional nodes involved were as follows: 112 of the upper extremity, 34 of the neck and face and 26 of the lower extremity. The swelling varied in size up to that of an orange. Usually the nodes were tender, with heat, redness and edema of the overlying skin; some were not tender. Nodes were usually movable; those which were fixed showed suppuration at operation. Sterile pus developed in 47 cases. Those not treated surgically disappeared in from 2 weeks to 6 months and longer. Cases which drain spontaneously may continue to do so for weeks or months.

Constitutional Symptoms. In addition to the lymphadenopathy most of the reported patients have had some of the following systemic manifestations:—malaise, anorexia, nausea, ease of fatigue, aching, chilly feelings or chills and headache. Abdominal pain has occurred occasionally. A few have shown erythematous maculopapules; papular lesions have been reported. (Erythematous areas occurred in the first case reported here.) A measles-like eruption may occur. Most patients have fever, usually low-grade, though fever of 105° has been reported; fever has lasted from several days to 5 weeks. (Recurrent fever was present for 4 weeks in our first case.)

Laboratory Studies. Mild leucocytosis up to 13,000 is the rule; only occasionally does the count go higher. Sedimentation rates are generally moderately elevated. Cultures from the pus are sterile. Tularemia and heterophile agglutinations are negative as are Frei tests and complement fixation tests for lymphopathia venereum.

The *intradermal test* is diagnostic. Hanger and Rose were the first to make the antigen in 1945 (unpublished studies). It is prepared by the method we used in the past to make the Frei antigen, either by aspiration of pus from the non-draining bubo, or by macerating a removed node, diluting the material with saline and sterilizing it by heat. (The antigen reactivity is checked by the result in a known case of the disease. The antigen made in Case 2 gave a reaction in this patient and also in Case 4 simultaneously with a positive result with one of

Dr. Daniels' antigen.) The potency of the antigen prepared in this way is variable. Students of the disease have found some individuals responding to one antigen and not another. But there have been no false positive reactions.

Diagnosis

The matter of diagnosis offers the excuse for our case reports. It is quite likely that cat scratch disease may have been encountered by many physicians in the past, and by necessity has been thought to represent lymphadenitis secondary to some unknown infection in the region of its drainage, or if related to a cat scratch as probably some form of secondary infection at the site of trauma. Our dilemma in diagnosis in 1947 is illustrated in Case 1.

In other cases it no doubt has led to incorrect clinical diagnoses which have puzzled the physician because of some atypical element. Daniels and MacMurray indicate that the clinical diagnosis in their collected cases have included the following:—tularemia has been diagnosed especially in the instances of axillary lymphadenitis; Hodgkins disease, lymphosarcoma, infectious mononucleosis, tuberculous adenitis and infected thyroglossal duct cyst have suggested themselves in cases showing involvement of cervical nodes; lymphopathia venereum has been suspected in instances of adenitis in the groin. The absence of anticipated laboratory findings, or of a clinical course which rules out certain of these diseases, should raise the question of exposure to cats and the possibility of cat scratch disease.

Of exceeding interest are five reports of encephalitis occurring in the presence of adenitis and with positive skin tests. Death occurred in one of these. (We have added another instance of encephalitis.)

Pathology

Microscopic examination of affected lymph nodes is reported to show hyperplasia of the reticulo-endothelial cells in the early stages, with the later development of focal granulomata going on to necrosis and suppuration. A layer of epithelioid cells may surround the granuloma; giant cells may be present. Studies in an attempt to demonstrate pathogenic organisms in the nodes have been unsuccessful; cultures are

consistently negative.*

Summary

A case of cat scratch disease was studied by one of us in 1947, before the syndrome had been described in the literature. The patient was found to have a positive skin test in 1953.

The disease seems to be widespread throughout the United States. An initial lesion at the site of the scratch or bite is common. The regional adenitis, which may go on to suppuration in about a third of the cases, is the usual reason for the seeking of medical aid. Commonly there are mild systemic symptoms. The intradermal test is specific. Treatment with sulfonamides or antibiotics so far has been reported as unsuccessful.

We have selected four patients from our small series of cases to illustrate:—the site of lymphadenopathy, healing with and without suppuration, the similarity of the pathologic picture at times to that of tuberculous adenitis, and the development of encephalitis with recovery.

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*The etiology of the disease remains unknown and the cats involved are not necessarily sick. Cats suspected of transmitting the disease have had negative intradermal tests with this specific antigen. Studies by Dr. Charles Armstrong of the National Institutes of Health have failed to produce disease in a variety of animals by the injection of emulsified material from infected lymph nodes. The infectious agent has not been grown in the hen's egg. French workers have reproduced the human form of the disease in monkeys.

The treatment of tuberculosis has been completely reoriented with the passage of recent years. This fact is well brought out in the accompanying paper. Nevertheless the disease remains a constant problem, and an aging population introduces new problems which have to be taken into consideration in the management of the disease.

THE PRESENT DAY TREATMENT OF TUBERCULOSIS*

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The tuberculosis patient and his physician today can look to the future with much more optimism than was justified a few years ago. There is no doubt that more and better hospital facilities, advances in thoracic surgery, and potent antibiotics can be happily combined to promote more rapid and more certain recovery from this disease. This is a period of advance and changing concepts. Because of these changes, it is perhaps more difficult to outline a generally accepted plan of therapy than would have been the case a few years ago.

As an example of the change in treating tuberculosis, the following table may be of some interest. This is a tabulation of selected therapeutic measures during a five year period as carried out at the West Tennessee Tuberculosis Hospital. Three years, 1949, 1951, and 1953 have been chosen for comparison.

Comparison of the Number of Therapeutic Procedures at the West Tennessee Tuberculosis Hospital During the Years 1949, 1951 and 1953

	1949	1951	1953
Primary thoracoplasty	117	46	12
Pneumonectomy	34	24	14
Lobectomy	83	89	95
Segmental resection of lobe	1	9	49
Phrenic paralysis	233	250	223
Intrapleural pneumonolysis	89	42	24
Extrapleural pneumonolysis	14	10	1
Initial pneumothorax established	123	80	37
Initial pneumoperitoneum established	42	175	329
Number of bronchograms	97	227	270

Inspection of this table reveals a strong trend away from primary thoracoplasty. In fact, nearly all of the thoracoplasties now done are for the purpose of diminishing pleural space following pulmonary re-

section. Not only has pulmonary resection become increasingly popular, but segmental resections, rather than pneumonectomies and lobectomies, have been the procedures of choice more and more frequently. This trend has developed from the recognized need to conserve functioning lung tissue and has become possible with improved surgical technic and more prolonged chemotherapy preoperatively. Often bilateral segmental resection thus is feasible.

It is to be noted that intrapleural pneumothorax, commonly used in 1949, is now infrequently applied. We should bear in mind that this is a very effective mode of therapy in properly selected and expertly managed patients. It should not be totally discarded.

Pneumoperitoneum, which was relatively unpopular in our hospital in 1949, was most frequently used in 1951 and 1953. Undoubtedly, the experience of the Veterans Administration was a strong influence in the renewed popularity of this procedure. In our hands it is most commonly used together with chemotherapy for prolonged periods in order to more quickly bring the patient to definitive thoracic surgery. One should not fail to state that pneumoperitoneum, plus rest and chemotherapy, often are the final measures in permanent arrest of the disease. When partial collapse and restricted ventilation is desired particularly for one side, the respective hemidiaphragm is often temporarily paralyzed by crushing the phrenic nerve.

Chemotherapy

In the realm of specific antibacterial therapy, numerous drugs and antibiotics have been produced and studied. Because of their relative effectiveness and low toxicity, only three of these agents—streptomycin, PAS (para-aminosalicylic acid)

*Read before the Tennessee State Medical Association April 21, 1954, Nashville, Tenn.

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and isoniazid are commonly used. When the West Tennessee Tuberculosis Hospital first opened in 1948, it was common practice to give streptomycin, one or more grams daily. Because of the toxic symptoms, and the emergence of drug resistant strains of tubercle bacilli, the drug was saved more or less for acute episodes of the disease or for periods of thoracic surgery. Investigators, particularly Tempel¹ and his associates, then found that when intermittent doses of streptomycin were given with the daily administration of PAS, the therapeutic effect was high and drug resistant bacilli usually did not emerge for eight months or longer.

The story of isoniazid is well known. Unfortunately, when used alone, its effective period in cavitary or caseous lesions is short. Its combination with streptomycin² is the most effective and is well tolerated. When the patient's sputum is converted to negative within four weeks, the long range effectiveness of this team is excellent. When the sputum is not quickly rendered negative, the tubercle bacilli isolated are found resistant to both drugs in just a few weeks.

Luckily, isoniazid and PAS both given daily appear to be as effective as isoniazid and streptomycin. Thus, for those patients who can tolerate PAS, one has available two potent regimens of treatment which are effective for long periods of time: one, streptomycin and PAS, the other PAS and isoniazid. At present we tend to favor an initial regimen (for adults) of streptomycin 1.0 gram twice weekly and PAS—9.0 to 12.0 grams daily. Often this carries the patient to the time of discharge from the hospital when he can be placed on 200 to 300 milligrams of isoniazid and PAS 9.0 to 12.0 grams daily. This home therapy has the advantage of not requiring intramuscular injections.

The use of all three drugs in combination appears to have no advantage over a combination of only two drugs in pulmonary tuberculosis. In tuberculous meningitis, it is probably desirable to use all three.

In the presence of a positive sputum it appears to be unwise to give any of these drugs singly because of the rapid appearance of drug resistance.

One probably should not omit mention of Viomycin which can be used in place of streptomycin and in a similar manner. It should be remembered that it is less effective and more toxic, particularly nephrotoxic. Its use must be more carefully supervised.

In emphasis of the great value of chemotherapy, it might be noted that upon one recent day, only 45 patients of a total hospital census of 384, had a positive sputum. In another field, the mortality from tuberculous meningitis³ has been reduced from 100 percent to about 12 percent among a group of children treated early and adequately. There is evidence⁴ to indicate that in tuberculous pleurisy with effusion treated with chemotherapy and rest, the incidence of later pulmonary tuberculosis may be reduced from approximately 65 percent to about 10 percent.

These developments attest to the great value of the agents which suppress tuberculosis in man. On the other hand, the failure of chemotherapy is all too obvious in the patients whose sputum is never converted from positive to negative. Also, there are the numerous patients who have had negative sputa for many months but when their residual disease is resected, tubercle bacilli can be demonstrated in the surgical pathologic specimen.

Surgical Therapy

This brings us to some consideration of thoracic surgery in tuberculosis. One of the greatest contributions of the physician treating tuberculosis is his ability to judge when so-called medical measures are not likely to achieve a lasting arrest of the patient's disease and when surgical intervention is likely to greatly increase the likelihood of the patient's lasting recovery.

It seems logical to assume that reactivation of tuberculous disease arises from foci which are known to commonly harbor tubercle bacilli for months and years after prolonged treatment. This is particularly true of unclosed cavities, caseous necrotic nodules, and tuberculous bronchiectasis. All of these lesions are common residua of medically treated tuberculosis.

The discovery and evaluation of these

residua necessitate the use of such special X-ray technics as laminography and bronchography. The decision to follow conservative therapy or pulmonary resection often hinges upon these studies. Residual bronchiectasis may be so well localized as to make resection advisable or so widespread as to indicate the impracticality of such an approach.

In any consideration of the surgical treatment of tuberculosis, one is constantly confronted with the knowledge that in most instances these procedures decrease to varying degree the capacity of the patient to breathe. This capacity has already been reduced by the disease. This is particularly important among patients in whom emphysema takes its increasing toll with advancing years.

This introduces the subject of a change in the age distribution of patients admitted to the tuberculosis hospital. More and more, the hospital population is becoming an older population. At the present time, in our 400 bed hospital, there are 82 patients above 50 years of age, 34 above 60, and 9 above 70. These patients often have arteriosclerosis, pulmonary emphysema, arthritis, diabetes, cardiac failure, prostatic hypertrophy, etc. Because of these complicating illnesses, modified rest and chemotherapy is all that can be offered in many instances. It has been said that aged tuberculous patients might well be given so-called domiciliary care, but the frequency of these other diseases necessitates ready access to the diagnostic and treatment facilities of a well equipped hospital.

Summary

Let us return now to the two most outstanding recent developments in the treatment of tuberculosis; i.e., antimicrobial therapy and pulmonary resection. Because of these, the following questions have either been openly expressed or inferred:

1. Can the home treatment with antibiotics substitute for hospital care?
2. Is the old "stand-by" of rest and more rest really necessary?
3. Is there any place for the use of "old-fashioned" treatment such as pneumo-

thorax, phrenic paralysis, pneumoperitoneum, and thoracoplasty?

4. Can the treatment of tuberculosis be resolved into two simple routines, chemotherapy alone or chemotherapy plus pulmonary resection?

The answers become a matter of varying individual opinion. This individual opinion may be summarized as follows:

The treatment of tuberculosis is still long drawn out and uncertain of final success. The available antibiotics alone are unable to totally eradicate tuberculous infection in man. Therefore, the other measures which were once useful still have their place, but we can be more versatile and less dependent finally upon any one of them. Each case must be carefully individualized and often elaborately studied. Strict rest is still important. Finally, all of this plus isolation can best be accomplished in a tuberculosis hospital until a point is reached at which the informed patient can continue his convalescence at home. Because of the antibiotics and other therapy, this point is often reached at an earlier date than would otherwise be possible.

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Discussion

P. M. HUGGIN, M.D. (Knoxville): It is with a great deal of interest that I have listened to Dr. Bowerman's paper. He has certainly covered the subject in a most adequate and thorough manner and there is very little left that I can add to this particular subject.

However, there are two points I would like to re-emphasize. First, I would like to say something on the incidence of tuberculosis, particular-

ly in regard to the number of cases presenting themselves for treatment in comparison to the rapidly declining death rate. When we study the death rate in tuberculosis and compare it with that of ten years ago, we can be greatly pleased with the rapid decline. Tuberculosis is now down to the eighth place in the causes of death, whereas only a few years ago it was first, then third, then fifth. This may permit a feeling of complacency to arise among us, to think that the problem is fairly well licked and that we have no reason to be concerned too much about the disease. Those of us who are engaged in the practice of chest diseases know this is not true. There has been some fall in the case rate but the fall in the case rate has been nothing like that in the fall in the death rate. This simply means that with our better management of the cases we are able to save more people from dying of tuberculosis. It is still the leading cause of death in the age group from fifteen to thirty-five. It is still a crippling disease, causing many months of disability, and with the newer methods of treatment, an expensive disease in our tuberculosis hospitals, 85 percent of our admissions are advanced cases. This is essentially the same figure we found twenty years ago when studying the classification of admissions to tuberculosis sanatoriums. This means that more effort should be made to find cases in the early stage and to start treatment on them before it has become advanced. In 1952 there were 2,131 new active cases of tuberculosis reported in Tennessee. If we could completely empty all the beds for tuberculosis in hospitals in Tennessee, we could only hospitalize these patients for approximately seven months. That would probably be adequate if we did not already have our hospital beds full. So, we still have the problem with us. We cannot rest on our laurels at this time and think the job is well done.

The second point I would like to emphasize and discuss is that of drug therapy. I may seem a little pessimistic in my discussion of this problem but I do definitely feel that the only way tuberculosis can be controlled is by extreme diligence, I think *the most important part of drug therapy is to know when to start it*, and of lesser importance is when to stop. We have three drugs which are excellent for treatment of infection caused by the *mycobacterium tuberculosis*—streptomycin, isonicotinic-acid hydrazin, para-aminosalicylic acid. I would like to say a little about the use of these drugs. *They should never be started*

until the diagnosis has been confirmed. I do not think that an X-ray film alone is enough to make a diagnosis of tuberculosis. In most instances of active tuberculosis, a positive sputum can be obtained. *Only after a positive sputum has been obtained should drug therapy be instituted.*

There are certain exceptions to this but then the diagnosis is usually confirmed by other means, as in tuberculous meningitis, military tuberculosis (where organisms are not thrown off immediately), and in proven extra-pulmonary tuberculous lesions. Now the reason for this, I think, is clear. We have three drugs, which when used properly, are very effective against tubercle bacilli but they only prevent the reproduction of the organisms, they do not kill the organisms in the animal. Furthermore, when given for relatively short periods of time, alone, resistant organisms develop. The drugs then lose their effectiveness. We have seen a population as a whole develop resistance to penicillin. When we compare the doses of penicillin given now to obtain effective results, to doses given in 1944-45, we are shocked at the tremendous amount of increase necessary to produce the same therapeutic effect. And in some instances, infections flourish in spite of big doses of penicillin. This happens with all of the antibiotics. If streptomycin is given in two gram doses daily for a period of fourteen days, resistant organisms can develop in that time. Isonicotinic-acid hydrazin, when given alone, leads to resistant strains in six weeks. When given in combination these do not cause resistance, if properly managed, for several years. There is a combination of streptomycin and penicillin on the market that is very popular. It has a gram of streptomycin, and I think 300,000 units of penicillin that can be given at one injection. I think this is a dangerous combination and should be used only when one is treating proven tuberculosis. One could very easily cause the organisms that patients harbor to become resistant to the antibiotic and the patient may break down later with the resistant strain which would not respond to the drug. So I would like to issue a word of warning against the indiscriminate use of these drugs for fear we may develop a strain of organisms which can be passed from man to man which are drug resistant.

I have enjoyed Dr. Bowerman's paper very much and appreciate the opportunity to participate in this discussion.

An otolaryngologist discusses the hazards of adenotonsillectomy and the end results of poorly performed operations.

CLASSIFICATION OF ADENOTONSILLECTOMY AS MINOR SURGERY*

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The very first volume of *The American Journal of the Medical Sciences* in 1828 has Hosack¹ speaking thus of adenotonsillectomy: "The frequent occurrence of the disease requiring the operation of removing the tonsils should be deemed sufficient apology for calling the attention of the profession to a subject apparently so simple in itself . . ." Physick,² in the same volume, speaks of the ease of the operation which can be finished in a moment of time, with little pain and moderate hemorrhage. His article contains an excellent lithograph of the details of a tonsil guillotine currently in widespread use today.

Throat disease and surgical attacks upon the tonsils are mentioned in earliest medical writing. Celsus³ in "De Medicina," 50 A.D., says that "to remove them it is only necessary to separate them all around with the fingernail and tear them out." If this is not possible, Celsus advises that the tonsils should be grasped with a hook and cut out with a knife.

The adenoids received scant attention until Meyer⁴ reported on the significance of "(On) Adenoid Vegetation in the Nasopharyngeal Cavity" in 1868. Wright⁵ praised him by saying, "In seeking for the cause of a Eustachian catarrh in a patient he pushed his finger above the velum palati and thus became aware of a morbid growth, the removal of which has alleviated as much suffering and prevented as much disablement as any surgical procedure ever devised by the wit of man." The above observation in spite of its being the worst performed operation commonly done today.

Early in this century the surgical excision of the tonsils and adenoids became immensely popular. The striking benefit to the child's general health following the

removal of the tonsils was prominently stressed in the medical and lay press. The inauguration of physical examination of school children stimulated interest in the correction of discovered deformities. In Rochester, New York, during 1920-1921, citizens concerned with the community health perfected an organization that made it possible for all children in the city, who were designated by the examining physicians as suffering from diseased tonsils, to have the benefit of the surgical removal of the tonsils and adenoids. The ten year follow-up of these cases was reported in a classic monograph by Kaiser.⁶ He seemed disappointed in the lack of statistical decrease of otitis media in the cases operated upon as compared to those not operated upon. I believe he erred in assuming that most of the adenoidectomies were adequately performed.

During this time the pendulum swung widely and tonsillectomies were performed in wholesale lots in from the largest hospitals (some 40 per cent of pathological specimens) to the backwoods schoolhouse infirmaries. The mass removal thus prevented much potential tonsillitis and associated "strep" throat which was so hazardous in the pre-antimicrobial drug era. Consequently, in spite of the occasional death, the balance of mortality and morbidity was in favor of the surgical procedure, in spite of the uvulotomies, lacerated palates, tonsil tags and whole adenoids which were left on the surgical trail. Scant attention was paid to the proper excision of the adenoid tissue. A blind scoop of the central mass was made to increase the respiratory airway.

Sluder widely popularized the use of the tonsil guillotine whereby under nitrous oxide anesthesia the operation was performed in ten to twenty seconds. His classic monograph "Tonsillectomy" (1923), described the "Sluder Method" developed during 20,000 operations. For that generation and time,

*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, April 19, 1954, Nashville, Tenn.

it was the operation of choice. However, I doubt that few ever attained the 99.6 per cent perfection of doing the complete, ideal tonsillectomy he claimed was possible. His technic has been so widely disregarded that anyone using a guillotine should familiarize himself with the original monograph. To him it was a minor procedure whereby the patient had his regular breakfast before the light anesthesia and rapid enucleation. He claimed few complications (not one pulmonary abscess in this pre-antibiotic era) and mentioned no deaths in his experience with 20,000 cases. Properly executed this method could be classified as a minor surgical procedure.

The indications for performing the operation at all have been radically changed since the advent of antimicrobial agents and concomitantly the understanding of the tubotympanic physiology. Whereas recently the target was the tonsil, now it is the adenoids which are of first importance. Yesterday's lives were saved by eradication of a frequent trigger zone of infection. Today acute tonsillitis is less fraught with danger and, except for the occasional peritonsillar abscess, fetor oris, persistent infection, or systemic factors, there is seldom good cause for recommending tonsillectomy *per se*. The complete removal of the adenoids is primary and the tonsils are then excised secondarily while the child is still asleep.

Most operations should now be aimed at adequate removal of the nasopharyngeal lymphoid tissue which is related to the respiration of the middle ear, and thereby hangs a tale—a sordid travesty on our surgical age. How frequently the operation has to be repeated! Granted that factors such as irritation and allergy will cause marked hyperplasia of the lymphoid remnants, still it is reality that the vast majority of adenoids (or tonsils) that grow back were never adequately removed in the first place. The parents have paid for and endured the emotional duress of an adenotonsillectomy only to have the job half done. The man who views directly the nasopharynx during the secondary operation can distinguish between smooth lymphoid hy-

perplasia and the corrugated remnants of the original tissue.

Modern surgical precepts include not only that the operation be properly and safely performed, but presupposes that the surgeon knows for why he is doing the operation. Just as it is highly suspect when a surgeon does an appendectomy on a female without a pelvic examination, so it is when adenotonsillectomy is performed without knowledge of the middle ear.

Adequate removal of the adenoids requires:

1. Knowledge of the anatomy of the nasopharynx.
2. Anesthesia adequate to abolish pharyngeal reflexes.
3. Proper instrumentarium.
4. Direct vision with good illumination.
5. Time.
6. Hemostasis.
7. Visualization of the end-result.
8. Experience. This requires training, not only to remove the offending tissue, but to avoid injury to the torus tubarius and courting that most distressing condition, autophony.

The tragedies and deaths associated with this procedure attest to the plea that it be considered major surgery. I personally know of some fifteen deaths during the past twelve years in the environs of where I practice. Assuming that for every death there were several narrow escapes, there is no estimate of how many cerebral nerve cells have been damaged and how many potential Phi Beta Kappas have barely managed to pass through elementary school. It is not easy to think of my friends with their twelve year old incontinent, moronic daughter, who went so happy and gay to have a routine tonsillectomy before starting to school.

Not any of the tragedies of which I am personally acquainted have been reported. Critical survey of most such cases will reveal error, neglect, or lack of surgical judgment on somebody's part. The incentive to evaluate all circumstances in print is not great. Deaths are attributed to such a variety of causes as from acute myocardial insufficiency to simple respiratory failure,

that accurate surveys through vital statistics are very difficult.

Badger,⁷ an internist speaking at a symposium on "The Tonsil and Adenoid Question," thinks the hazards are worth serious thought. He deplores the paucity of recent studies on the subject and cites eight deaths associated with adenotonsillectomies in the small state of Massachusetts in 1950. He states, "The internist thus remains reserved in his attitude toward the removal of tonsils and adenoids, since a dead patient is not a good result."

The best prevention of such disasters is surgical knowledge. A bloody operation in the middle of the respiratory airway dictates grave responsibility to the operator which he cannot delegate to anybody else. He should be versed in general surgical principles and be able to handle any surgical emergency which may reasonably be apt to occur.

Boies⁸ states that the regard of this surgery as a minor procedure seems to justify its attempted performance by many who have not acquired skill in working in this area. "This performance on the part of the unskilled accounts for the fact that at least one in four tonsillectomies is not well done and one in two adenoidectomies is poorly performed." He further quotes Dr. Ralph Knight, president of the American Society of Anesthesiologists, as often making the statement "that a surgeon who cannot insert an intratracheal tube should not be doing tonsil surgery." Show me an anesthesiologist who will speak of administering ether for adenotonsillectomy as a minor task!

There is a broad allusion that any physician, regardless of experience, can learn to "do tonsils" as soon as he tries a few. As an interne I performed without supervision the second adenotonsillectomy I had ever seen. During my brief time on the service I subsequently performed some two dozen unsupervised operations without difficulty and fancied myself as quite an operator, and conscientiously performed the operation in private practice in good faith. My ignorance was bliss, and I would have been personally offended had anyone questioned my competence. It was not until later that I obtained a true perspective of the objec-

tives of the operation and also its hazards. It points out the old adage that thirty years' experience can be one year's experience thirty times.

We have men who have been doing the operation poorly for many years and are sincerely unaware of their inadequacies. The dilemma is that they are teaching new generations their methods and we are powerless to give any effective supervision while the adenotonsillectomy is under a minor classification. Simple appendectomy is classified as major surgery. Because of specific standards most hospitals have for such surgery, it is comparatively easy for colleagues to insist that a man get more formal training who is consistently unable to find a normally related appendix through the McBurney incision. Not so with inept adenotonsillectomies because we have no rules to abide by.

Indeed it is hard for the otolaryngologist or competent surgeon to protest, for immediately he becomes suspect of wanting monopoly and the taint of rascality is pointed at him. However, most cities and areas associated with medical centers have set up some standards.

In the metropolitan areas where I practice, adenotonsillectomy is classified as minor surgery and the privilege to so operate is granted in most hospitals along with the right to incise a furuncle.

Informed laymen are taking a more active part in these affairs and the lay press is more intensively critical. The hospitals have a grave responsibility. I quote from a recent article in an executive type magazine:⁹ "Aside from rare cases of gross malpractice considered by local medical societies, the hospital is now the place where disapproval can be registered effectively, and it has therefore become the most powerful police agent of the medical profession." The prevalent practice of tinselled surgeons performing adenotonsillectomies in their office or "clinic" as a minor operation is even more difficult of policing, and I only hope that general opinion will soon eliminate this hangover from the days of kitchen-table surgery.

Summary

Adenotonsillectomy is not a minor sur-

gical procedure. The original "Sluder Method" was classed as such. For those who wish to follow the modes of that era, let them familiarize themselves with the nitrous oxide fifteen-second technic and follow it exactly, as it has not been improved upon since 1923. There is the occasional case where this method is as apropos as any, but this is not the procedure of choice in enough instances to justify its widespread use. Indications, surgical technic, and operative objectives have undergone complete reversal in recent years. Recognition of adenotonsillectomy as a major operative procedure will save lives and assure a medical job better done.

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This is a concise and critical consideration of a complex problem which most practitioners face repeatedly, and the author, consultant in cardiology at the Boston Lying-In Hospital, is one well qualified to discuss it. In the introduction he defines the role of the physician in the problem, as well as that of the patient and her husband, and recognizes its numerous moral, ethical, and religious ramifications. The bulk of the paper, however, is a discussion of the medical and physiological aspects of the problem.

The subject is considered under the general headings of rheumatic, congenital, and hypertensive heart disease with the problems peculiar to each being taken up in turn. Discussion is based on the observation that three questions must be answered in these cases: (1) maternal and infant death rate, (2) the risk of immediate invalidism, and (3) whether maternal heart disease injures the infant.

While pointing out the improvement in prognosis for both mother and child that has resulted from advances in cardiac surgery and the control of congestive heart failure and hypertension, Dr. Hamilton retains a very conservative attitude. He emphasizes repeatedly the necessity throughout pregnancy for continuing attention to the patient's cardiovascular status as well as her obstetric condition.

The paper is concerned very little with specific details of therapy, but the bibliography accompanying it includes references to sources of such information. The brief section on the physiology of the circulation in pregnancy should prove especially worth while to the practicing physician. (Abstracted for the Middle Tennessee Heart Association by Thomas M. Blake, M.D., Nashville.)

CASE REPORT

A Case of *Cryptococcus* (Torula) Meningitis Treated with Ethyl Vanillate

Felix G. Line, M.D., Knoxville, Tenn.

Cryptococcosis (torulosis, European blastomycosis) has been recognized since 1861. The organism can attack various tissues of the body, but of the approximately 220 reported cases, about 80 per cent have been meningo-encephalitic form.¹

Ethyl vanillate, a by-product in the manufacture of sulphite pulp, was found by Christie² to have fungicidal effect against histoplasmosis. Because of the previously reported almost universally fatal outcome of central nervous system cryptococcosis with various therapeutic agents, it was decided to treat this patient with ethyl vanillate.*

Case Report

W.D.S., 12 year old white female, was first seen on June 14, 1953, at the Knoxville General Hospital, with the complaint of headaches intermittently for a period of one month. These occurred almost daily and varied in intensity. Occasionally the headaches were accompanied by fever and vomiting, and she complained of blurred vision. Her marks in school had been below her usual average during the past several months.

Physical examination at this time showed no abnormalities other than a bradycardia of 50 per minute, temperature of 101 F. and a soft systolic murmur which was considered functional. The neck was not stiff, the eyegrounds were normal and there were no abnormal neurological signs. Complete blood count showed only a mild anemia and a sedimentation rate of 44 mm. per hour; repeated urinalysis were negative; stool examination for ova was negative. X-ray film of the chest showed enlargement of the mediastinum which was considered to be due to adenopathy on the right side. X-ray film of the skull was negative. EKG was normal. Vollmer patch test and histoplasmin skin test were negative. She was dismissed from the hospital on June 18 and advised to have an examination by an ophthalmologist and neurosurgeon.

She was readmitted to the East Tennessee Baptist Hospital by Dr. W. E. Smith one week later for a ventriculogram because of the development of diplopia, weakness of the left sixth and seventh cranial nerves, and the development of one diopter papilledema. Vomiting and headaches had persisted. A brain tumor of the posterior fossa was suspected. On June 26, under general anesthesia, bilateral parietal burr openings and ventriculo-

gram were done. The ventriculogram was normal. The ventricular fluid was under increased pressure and about 10 cc. was sent to the laboratory. This fluid showed a total white cell count of 184 per cmm. all of which were lymphocytes. Protein was 91 mg.% and sugar was 28 mg. per cent. Gram stain of the spinal fluid sediment showed several budding yeast cells morphologically resembling *Cryptococcus neoformans*. Culture on Sabouraud's agar was later reported as positive for *C. neoformans*.† Culture for tuberculosis was negative.

A lumbar puncture on June 29 showed a fluid pressure of 350 mm. of water, and again the yeast organisms were observed on direct smear; subsequent culture on Sabouraud's agar was positive for *C. neoformans*. Lumbar punctures were repeated on July 2, 4, 9, 17 and 27; these taps each revealed a gradually diminishing pressure, the last tap showing a pressure of 100 mm. of water. The cell count fell to 43 lymphocytes but the protein remained greater than 200 mg.% and the culture remained positive.

Post-operatively the symptoms of severe headache, vomiting, and fever persisted without improvement for 11 days and then showed gradual improvement. She developed stiff neck one week after the ventriculogram. During this time she required intravenous fluids and high doses of sedatives.

On June 29, sulfadiazine, 2 Gm. as a first dose followed by 1 Gm. every 6 hours was started. This was continued until July at which time sulfadiazine was stopped and ethyl vanillate, 3.5 Gm. every 4 hours was started. This drug is furnished in 0.5 Gm. capsules necessitating that she swallow 7 capsules at a time. These were fairly well tolerated until July 9 at which time it became necessary to discontinue them for 2 days because of intractable vomiting, presumably due to the gastric irritation of the drug. An attempt was made to begin ethyl vanillate again in reduced dosage on July 21 but the patient refused to take them.

By July 27, her headache and vomiting had stopped, the neck was no longer stiff, the papilledema had cleared, and her morale had improved. It was decided that she should be dismissed from the hospital with the expectation that the drug be resumed at a later date.

Between July 26, 1953, and January 22, 1954, the patient was seen as an office patient on five occasions. She showed steady improvement during this time. She gained from 57 pounds to 79 pounds and she was free of symptoms. Two lumbar punctures were done during this period both of which showed moderate pleocytosis. The last specimen in October for the first time showed negative cultures on Sabouraud's agar.

†Our identification of the organism as *C. neoformans* was confirmed by the Communicable Disease Center, U. S. Public Health Service, Chamblee, Ga.

*Supplied by E. R. Squibb Co.

Her final admission to the hospital was January 22, 1954, because of recurrence of severe head pain and a staggering gait of 4 days duration. Lumbar puncture on January 22 showed a pressure of 400 mm. of water, 111 white cells per cmm., protein of 145 mg.% and positive culture for *C. neoformans*. About 4-5 cc. of fluid was removed for study. Her headache became more severe and on January 24, about 26 hours after the lumbar puncture, she complained of excruciating head pain; she vomited and suddenly lapsed into unconsciousness and stopped breathing. She was placed in a tank respirator where she remained for 12 hours. During this time no spontaneous respiratory effects were noted, but the pulse and color remained good until death which occurred January 25, approximately 9 months from the time of onset of the symptoms.

Post-mortem examination by Dr. James Roberts revealed the following: "Viewed in place, the brain appears to be under considerable increased pressure, for as soon as the skull is removed and the dura incised the brain bulges over the cut edges considerably. The convolutions are flattened and the sulci almost totally obliterated. When the organ is removed, it is found to weigh 1,480 Gm. which is considerably heavier than normal. The tissues are also quite soft and tear very easily in handling. Around the optic chiasm there is a diffuse haziness to the meninges but no true collections of exudate can be found. The base of the brain is not remarkable.

Sections from all portions of the brain revealed a low grade chronic meningitis with an infiltration of chronic inflammatory cells in the subarachnoid tissues. Sections from both cerebral hemispheres do not disclose the usual cortical abscesses that are seen with *Torula histolytica* infections. However a section from the base of the brain reveals three separate granulomatous areas within the tissues of the brain stem and all of these show innumerable organisms which are surrounded by a zone of gliosis and chronic inflammatory cells. In none of the sections studied are organisms found in abundance in the leptomeningeal tissues."

Discussion

C. neoformans is a small yeast-like spherule, about the size of a red blood cell, which reproduces by budding. It grows rapidly on Sabouraud's glucose agar as well as on all the usual laboratory media at room temperature. Colonies appear in two days but culture should be held thirty days before discarding them as sterile. The portal of entry and the method of spread of the fungus is unknown. It has been found in foods,³ on the skin and in the intestinal tract of normal individuals.¹

The initial symptoms usually described

are headache, vomiting, weakness, and irritability. There may be prolonged remissions in the symptoms. Later the patient may show confusion, unsteady gait, abnormal reflexes, papilledema, convulsions, and coma. Death is from respiratory failure.

Early in the course of the disease a common diagnosis is intracranial neoplasm; approximately 23 per cent of all reported cases of cryptococcus were suspected of having an intracranial or intraspinal lesion and an operation had been performed.¹ The disease is often confused with tuberculous meningitis, lymphocytic choriomeningitis, encephalitis, and central nervous system syphilis. The diagnosis is established by finding encapsulated budding yeast cells in the spinal fluid, best demonstrated in a fresh India ink preparation. Fungus cells in the spinal fluid may easily be mistaken for lymphocytes unless the India ink preparation is used to demonstrate the capsule. There is usually a pleocytosis predominantly of lymphocytes, and the spinal fluid protein is usually elevated.

The course of the disease may be acute or chronic, but is usually chronic: 86 per cent die within one year, 70 per cent die within three months, and several cases have been reported alive, but not free of infection, after two and a half, seven and nine years.¹ Beeson¹ reported a case which survived 16 years after diagnosis at the age of 18 years. During most of this time the patient was relatively well, being able to do secretarial work, marry and bear 2 children. Various drugs had no effect on the cerebrospinal fluid, cultures of which were consistently positive for *C. neoformans*.

Of the reported cases, only one can be considered clinically and bacteriologically cured; in the remainder, there were persistent spinal fluid findings or inadequate follow-up data for proper evaluation.⁵ The case which recovered was that of Marshall and Teed in which sulfadiazine was the therapeutic agent used.⁶

Recently there have been varying, usually discouraging, results with the use of Actidione; Carton⁵ and Wilson and Duryea³ each report an "apparent cure" using this drug. Other forms of treatment which have been tried without consistent success are

deep X-ray therapy, sulfonamides, penicillin, potassium iodide, surgical excision of local lesions, arsenicals, intravenous alcohol, and cryptococcus antigen.

The case reported here was showing such remarkable clinical improvement accompanied by a negative spinal fluid culture after leaving the hospital that she was given no further treatment. However, administration of ethyl vanillate for a period of only two weeks was not considered sufficient to eradicate the infection. Several times during her period of relative well-being suggestions that the ethyl vanillate might have to be given again brought forth vigorous protests both from the patient and her parents because of the severe nausea which she experienced previously when the drug was given. Had she not gone downhill so rapidly, the plan was to resume therapy of some other form, if not ethyl vanillate. The last lumbar puncture might have hastened her death by too sudden a change in the dynamics of the cranial contents with secondary compression of the brain stem.

Summary

A case of cryptococcus meningo-encephal-

itis in a 12 year old girl treated briefly with ethyl vanillate is presented with a short review of the recent literature. Because of the chronicity of the disease and a tendency to spontaneous remissions, reports of "recovery" using various therapeutic agents should be accepted with caution.

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Diabetes in the Elderly. Miller, E. C., and Marble, A. *J. Am. Geriatric Soc.* 1:11, 1953.

The number of elderly diabetics in the population is increasing and they pose special problems. Extra effort must be expended to adjust the therapy to the home life and social status of the individual, and to his capacity for self-care and maintenance.

As an outstanding example, the matter of infection and gangrene of the toes and feet is cited. Vascular insufficiency and neuropathy, or both, may permit development of lesions of a serious nature. Not infrequently, proper education about foot care may prevent the acute difficulties.

Although vascular disease is common in the population over 70 years of age, it was greater in these elderly diabetics. In a series of 184 patients over 70, arteriosclerotic heart disease was present in 57%, peripheral vascular disease in 49%, retinitis in 26%, and hypertension in 55 per cent. Neuropathy occurred in 37 per cent.

It is emphasized that the recent studies showing the advantages of careful diabetic control in the prevention or postponement of complications are equally valid in the elderly patient. (Abstracted for the Tennessee Diabetes Association by Jean Murray Hawkes, M.D., Memphis.)

CLINICOPATHOLOGIC CONFERENCE

St. Joseph's Hospital, Memphis, Tenn.

Rupture of Cirroid Aneurysm of Left Gastric Artery

DR. S. J. BLACKWELL: Mr. President and Members of the Staff. The reason for reporting this case will be evident from Dr. Hurteau's discussion which will follow.

Mr. S. E., age 55, was admitted to St. Joseph Hospital, Feb. 10, 1954, with a chief complaint of cramping lower abdominal pain, obstipation, nausea, anorexia, two tarry stools and a weight loss of 20 pounds in the two months prior to admission.

The past history was significant in that he had been a heavy drinker for a long period of time and had been in and out of one of our local institutions on fifteen different occasions for acute alcoholism, and had received anti-syphilitic treatment during the year prior to admission. However, the blood Kahn was negative on admission to this institution. For a period of 2 years prior to admission he had noticed a mass in the left upper quadrant which had become progressively larger and which was thought to be an enlarged liver. In 1950 while upon a fishing trip he sustained an injury to the upper abdomen when he fell upon the edge of a boat. A local physician strapped the lower chest and upper abdomen with adhesive for about 2 weeks.

A review of systems was negative except those related to the gastro-intestinal tract and enumerated under chief complaint.

Physical examination revealed a thin, nervous, apprehensive, white male with a blood pressure of 150/100 and pulse rate of 80. Positive physical findings were confined to the chest and abdomen. There were scattered inspiratory musical rales throughout both lung fields. The abdomen was flat except in the left upper quadrant where a large, rounded, fixed, tense but not hard, and non-tender mass was present. The mass itself was dull to percussion and extended downward to a point two fingers above the umbilicus; however, there was a tympanitic area between the upper border of the mass and the xiphoid process and peristalsis was considered normal as was the remaining physical.

Admission laboratory work revealed a hemoglobin of 12.3 Gm., R.B.C. 4,200,000, W.B.C. 14,950 with 71% polys. and a sedimentation rate of 46 mm. in 1 hr; urine negative except for 7-9 pus cells per high power field; total serum protein 5.62, albumin 3.69 and globulin 1.93 Gm.%; BSP 9% retention at 20 minutes and 0 at 45 minutes. Thymol turbidity 2 units.

Dr. Cara will now discuss the X-ray findings.

DR. D. J. CARA: Examination of the lumbar spine on Feb. 11 showed no bone pathology. There was noted on the AP film a large, soft tissue mass filling the epigastrium on the left side. The only calcification present was in the abdominal aorta. There was no evidence of erosion of bone as might be caused by an aneurysm.

Examination of the colon showed no intrinsic pathology. However, the splenic flexure and transverse colon were displaced downward and anteriorly by the above-mentioned mass in the left upper quadrant.

A G.I. series following the barium enema showed the large mass to be confined to the posterior wall of the pars media of the stomach. The mucosa appeared to be intact. The mass was not movable, but firmly fixed to the retroperitoneal structures. The mass was quite large and measured on the films about 15 cm. in diameter. It projected into the lumen of the stomach.

Some question had arisen as to the possibility of this being a large tumor or cyst of the pancreas which had projected into the lumen of the stomach by pushing the posterior gastric wall forward. However, this is not the usual case since the stomach is a mobile organ and is more apt to be displaced by any such tumor mass.

In view of the fact that it was definitely thought to be a tumor arising from the stomach and also that it was a fixed mass, it was thought that the most likely diagnosis was a large *leiomyoma with carcinomatous degeneration* and infiltration into the retroperitoneal structures.

DR. A. J. GROBMYER: Surgery was undertaken February 16 under pentothal and endotracheal gas anesthesia. From the beginning of anesthesia there was a rather marked cyanosis of the neck, face and anterior chest wall which failed to clear up until the second postoperative day.

The peritoneal cavity was entered through an upper left paramedian incision and on opening the peritoneal cavity a large, tense, fixed mass in the stomach intimately attached to the spleen, mesocolon and colon was encountered. The most significant thing noted was the tremendous dilatation of vessels in and around the mass, the right and left gastro-epiploic and omental vessels being the size of one's thumb. An effort was made to enter the lesser peritoneal cavity through the gastrohepatic omentum, but the lesser sac was completely obliterated at this point and it was then approached through the gastrocolic omentum, but it was also obliterated at this point. The greater curvature of the stomach was freed of its omental attachment to

the level of the spleen but we were still unable to get around this mass at any point.

It was then felt advisable to open the stomach, biopsy the mass and have a frozen section done since there was no chance of a cure if the lesion was frankly malignant. On opening the stomach in the prepyloric area we were surprised that no intraluminal mass was present. There was an extreme degree of hypertrophic gastritis and the mass seemed to be within the layers of the posterior wall and greater curvature of the stomach. In retrospect, I believe these findings gave us the courage to proceed with the resection. The gastrotomy opening was then closed and the dissection started again in the region of the pylorus. While trying to free the pyloric end of the stomach the mass was perforated and a large amount of old blood was evacuated by suction which greatly decreased the size of the mass and made it easier to free the pylorus, which we did. The duodenum was bisected and the duodenal stump was closed in the usual manner. In freeing the posterior wall of the stomach from the transverse mesocolon it was necessary to sacrifice the middle colic artery. The dissection was then carried to the tail of the pancreas where we were forced to stop due to fixation. We then worked in the splenic area where an excessive amount of bleeding was encountered. It was necessary to compress the spleen in the region of the pedicle with the hand, to remove most of the spleen and then to ligate the vessels since we were unable to approach the pedicle from any direction. The fundus of the stomach was then freed downward to the tail of the pancreas, the tail being removed. This latter maneuver completely freed the stomach and made it possible to accomplish a 90 per cent gastric resection, followed by an anterior gastrojejunostomy with a Polya type anastomosis. The devitalized loop of colon was then exteriorized as a loop colostomy and the abdomen closed in layers with drainage.

The following day a Rankin clamp was placed on the loop colostomy and the necrotic portion removed. The blood loss was excessive during the entire procedure and it was found necessary to do a hematocrit

determination each hour to help us in replacing an adequate quantity of blood. However, during the last one and one-half hours we replaced too much blood and the hematocrit rose to 54.

The postoperative convalescence was complicated by a partial separation of the upper end of the wound down to the peritoneum which was packed and allowed to granulate in, by a rather marked diarrhea which responded to Pamine therapy, and by addiction to opiates which we felt certain existed prior to surgery but we were not aware of this at the time. Opiates were gradually withdrawn and the patient was discharged in satisfactory condition on the 31st postoperative day.

At home he refused to eat, became a chain cigarette smoker and returned to opiates in modern amounts.

In April of this year his physician felt that he had a gastrocolic fistula and requested that he be readmitted for study. The doctor relied on the patient's statement that when he drank milk it promptly appeared in the proximal colostomy, however, no one other than the patient had ever seen this happen. The major findings on the second admission were malnutrition and hypoproteinemia, the total serum protein being 4.5 grams. All X-ray studies were negative for any communication between the stomach and colon, and all stools appeared essentially normal.

Dr. Cara, will you kindly present the postoperative X-ray films on this patient.

DR. D. J. CARA: On April 7 a request for a small bowel series, and a colon examination for the possible demonstration of a fistula communicating with some part of the intestine and the anterior abdominal wall, revealed a very small gastric pouch remaining with an excellently functioning stoma between the pouch and the jejunum.

The small bowel series and a colon examination failed to show any evidence of a fistula. All of the tumor mass had been resected. The examination of the colon was carried out through the retrograde method by inserting a bardex catheter into the colostomy site.

DR. A. J. GROBMYER: Under the excellent care of Dr. Blackwell the opiates and cigarettes were again withdrawn, the diet greatly increased and the patient rehabilitated. He was discharged home for the sec-

ond time, April 24, in satisfactory condition. It is our present plan to wait until the nutrition is essentially normal and then to close the colostomy.

Dr. Hurteau, will you kindly discuss the pathological findings in this case.

DR. W. W. HURTEAU: The specimen as received at the laboratory consisted of a large portion of the stomach. This measured 35 cm. along the greater curvature and 22 cm. along the lesser curvature. Located on the anterior wall, near the greater curvature was a 10 cm. linear area of recent incision and suturing.

Upon opening into the stomach through the lesser curvature, the mucosa was thrown into markedly hypertrophic brain-like convolutions. These hypertrophied papillae were most conspicuous and extended diffusely throughout the mucosal lining. The mucosa was also markedly edematous and somewhat indurated in consistency. No points of ulceration or new growths in the mucosa proper were seen. On the posterior wall of the stomach and involving the entire posterior wall, extending from the lesser curvature to the greater curvature and for several centimeters beyond, was found a huge area of dissecting hemorrhage. This area was filled with fresh and clotted blood and the walls were made up of many fibrinous bands and clotted blood.

The wall of the stomach was markedly thickened, measuring 1 cm. in thickness. It had a peculiar appearance in that a good deal of it appeared to consist of hypertrophied muscle bundles interspersed with leathery-like, greyish-white fibrous tissue. It was not of the consistency or appearance of a linitis plastica, but appeared more like diffuse fibrosis throughout the stomach wall. No localized new growths were present. The lesions were mostly diffuse and non-circumscribed, and involved the entire wall of the stomach.

Also received was a mass of tissue from the region of the tail of the pancreas measuring 8 x 6 x 5 cm. This portion of tissue contains clotted blood and was continuous with the main dissecting area in the stomach wall. Many very large caliber blood vessels were said to have been freely anastomosing into the wall of this tissue. The remainder of the wall was made up of fibro-fatty tissue in which no pancreatic tissue was identified. This portion of tissue would be supplied by the left gastric artery and some of the short lienal arteries. Both the right and left gastro-epiploic arteries were identified, followed throughout most of their course and found to be slightly dilated, but otherwise normal in appearance.

Microscopic Examination. Many representative sections of the gastric wall showed an essentially similar picture of an intense fibrosing and chronic inflammatory reaction. The gastric mucosa was everywhere intact but showed a chronic inflammatory reaction; the mucosa was hypertrophic. The wall of the stomach was markedly

thickened by the inflammatory process. In some areas this process was made up of markedly edematous tissue containing delicate fibroblastic proliferation with fibrin deposition. In other areas the process was older and there was very dense fibrosis with intense chronic inflammatory cellular reaction. (Figure 1.) Areas of granula-

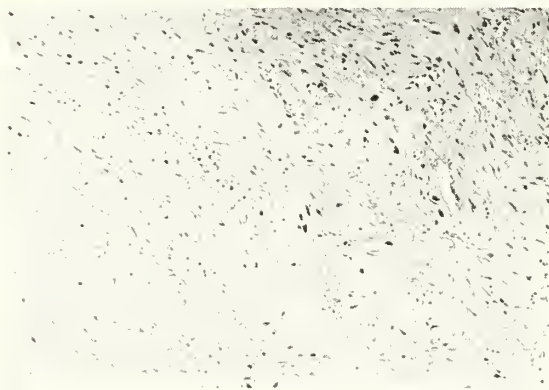


FIGURE 1. Photomicrograph of the posterior wall of the dissecting gastric hemorrhage showing the diffuse fibrosing process.

tion tissue were noted. Most of the blood vessels seen were of capillary size, except in one section in which there was a rather large, thick walled blood vessel. No primary inflammatory process of the blood vessels was present.

Sections taken from the tissue in the region of the tail of the pancreas showed many and very large caliber arteries with greatly thickened walls which were repeatedly cut in cross section in the tissue block. (Figure 2.) There was some hyaline de-

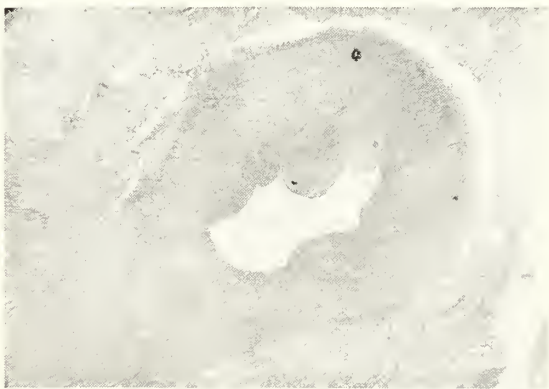


FIGURE 2. Photomicrograph of cirroid aneurysm type vessels in the wall of the tissue from the region of the tail of the pancreas.

generation within the media, but no actual atherosclerosis. These were large caliber vessels and had a well defined external and internal elastica. In addition to these large vessels coursing through this tissue there was very marked fat necrosis, some of which was recent and other areas of older fat necrosis with many fat laden macrophages, fibrosis and giant cells. A good deal of hemosiderin pigment was present in these sections and

also cholesterol clefts surrounded by giant cells. In addition there was fibrosis and granulation tissue similar to that seen in the gastric wall proper.

Diagnosis

The *anatomical diagnosis* in this case was:

Massive dissecting hemorrhage in the posterior gastric wall, probably due to a ruptured cirroid aneurysm of the left gastric artery and short lienal arteries in the region of the tail of pancreas.

Tissue from the region of the tail of pancreas showing extensive, recent and old, fat necrosis with hemosiderin and cholesterol deposition.

Diffuse fibrosis and inflammatory reaction of stomach, secondary to dissecting hemorrhage.

Hypertrophic gastritis.

Passive congestion of spleen.

Reactive hyperplasia of lymph nodes, gastric and region of tail of pancreas.

This was a most unusual case of a massive dissecting hemorrhage involving the region of the tail of the pancreas and posterior gastric wall. At the time of surgery approximately one liter of fresh and coagulated blood was found which appeared to be arising from the region of the tail of the pancreas and extending into the posterior gastric wall. This tissue in the region of the tail of the pancreas was markedly indurated and densely adherent to the gastric wall at the cardiac end of the posterior wall. All of the vessels entering this area were markedly dilated and thick walled. It was most heavily vascularized. This portion of tissue contained blood which was continuous with the blood present in the posterior gastric wall.

In the study of the sections, the great majority of the blood vessels of large size and of very thick caliber were found in the tissue from the region of the tail of the pancreas. These vessels were much larger and greater in number than vessels usually seen in this region. Only occasional conspicuous vessels were found in the stomach proper.

While the actual point of rupture could not be identified, the gross and histologic appearance of the vessels in this area certainly suggested *cirroid aneurysm*. It was believed that the bleeding started in this portion of tissue and secondarily dissected into the gastric wall. This opinion was based on the appearance at the time of sur-

gery and the presence of the following lesions in the tissue from the region of the tail of the pancreas:—large, thick walled vessels with hyaline degeneration of the walls, and hemosiderin pigmentation and cholesterol cleft formation which would suggest that this was the oldest point of hemorrhage. The hemosiderin and cholesterol clefts were found only in the tissue from the region of the pancreatic tail. The fat necrosis found only in this tissue was believed to be significant. While no pancreatic tissue could be identified in this inflammatory and markedly fibrosed tissue, both recent and old extension fibrosis was found. This would suggest an escape of pancreatic enzymes which may have been secondary to the rupture of aneurysmal vessels with hemorrhage. On the other hand, the release of pancreatic enzymes from a pancreatitis may have been responsible for the rupture.

The case was interpreted as one of massive dissecting gastric hemorrhage, probably secondary to ruptured cirroid aneurysm of the left gastric artery and short lienal arteries, with secondary dissection of the tissue of the region of the tail of the pancreas and into the posterior gastric wall. Whether or not fat necrosis was secondary to the hemorrhage or causative, could not be definitely ascertained.

Ruptured cirroid aneurysm of gastric vessels within the wall of the stomach has been reported by Donaldson in the *New England Journal of Medicine* (243:369, 1950). This lesion of our case was probably related, but occurring in vessels outside of the gastric wall proper with secondary dissection into the gastric wall. Cirroid aneurysms of the celiac plexus have also been reported.

DR. A. J. GROBMYER, JR.: I want to thank Dr. Cara and Dr. Hurteau for their excellent discussion and return the program to the President.

DR. E. C. SEGERSON: Are there any questions concerning this case presentation?

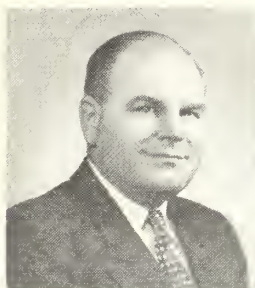
DR. R. R. BRAUND: What was the preoperative diagnosis?

DR. A. J. GROBMYER, JR.: Leiomyofibroma.

DR. WALTER HOFFMAN: How much blood did the patient receive?

DR. A. J. GROBMYER, JR.: Twenty pints.

President's Letter



DR. THOMPSON

As we talk to the physicians over the state, the question we are frequently asked is, "What is the Tennessee Medical Foundation?"

There seems to be a tendency to confuse this organization with the one formed several years ago to collect funds and purchase or build a home for the central office of the Tennessee State Medical Association.

The Tennessee Medical Foundation is a non-profit corporation established in 1952 for the purpose of carrying out the following broad functions:

1. To assist communities in analyzing health and medical care needs, and in developing plans and programs for securing better medical facilities and services for such communities.
2. To provide consultative and specialist services to physicians, dentists and nurses working in rural and isolated areas.
3. To help to relate the objectives of organized medicine to the work of public and private health agencies in the community, in the solution of its health and medical care problems.

The Committee on Health and Medical Care is the organization within the Tennessee State Medical Association responsible for the program development.

The chief reason for the formation of such an organization is the presence of certain substandard areas where, because of a lack of money to build and equip medical centers needed for the practice of modern medicine, because of the fear of isolation by the professional personnel concerned, and due to the physical hardships which frequently characterize the practice of medicine in isolated areas, adequate medical attention, including dental and nursing care, cannot be provided without subsidation.

This program has the cooperation, informally, of Vanderbilt University, the University of Tennessee and the Tennessee State Health Department. Your active support is of prime importance.

A handwritten signature in dark ink, appearing to read "J. Thompson", with a large, stylized initial "J" and a long horizontal stroke extending to the right.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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JULY, 1954

EDITORIAL

RESULTS OF PREFRONTAL LOBOTOMY

Lobotomy has been used for a decade and more in the management of some cases of chronic mental illness as well as in occasional instances for indications other than psychiatric. The operation has had its main use in making the control of violent manic patients less burdensome in the hospital for the mentally ill. It has made it possible for some patients to be discharged to the care of their families. The changed personality which follows the operation seems a lesser penalty to pay in light of the improvement which may be attained in the major psychiatric problem.

Since economic sufficiency and productivity are a prime consideration of the effectiveness of any method of treatment, Greenblatt, Wingate and Solomon* of the Harvard Medical School and the Boston Psychopathic Hospital have made a study of

work adjustment five and ten years after lobotomy.

In their study the authors compared four periods in the patient's working life. These were:—(1) before illness, (2) before operation, (3) one to four years after operation, (4) more than five years after operation. Thus a comparison could be made of work adjustment preoperatively and postoperatively, as well as a comparison in the early and late postoperative periods. For this study the first 100 patients operated upon between October, 1943, and April, 1946, were selected for follow-up study. All had been chronically ill with a hopeless prognosis. Half of these had been sick for five years, one quarter for five to ten years and the rest had been ill more than ten years. Half of the patients' hospitalization was for two years or less, 25 per cent had been in the hospital for from two to ten years and the remainder more than ten years.

Of the 100 patients in the study, 12 had died and 2 had moved from the State; 35 were living in the community and 51 were in State hospitals. The 86 studied included 49 women and 37 men; 40 were married, 46 single. Over half were high school graduates, 15 were college graduates, the rest had grade school education. Before illness most of the patients had been skilled laborers, clerical employees or housekeepers.

Good work adjustment for this study was defined as the person working every day, doing work well, few job changes and no long periods of unemployment. For the housewife it meant doing all the housework without help and to the satisfaction of the family. In the patients remaining in the State hospitals this meant good performance at a steady job. *Fair work adjustment* applied to those patients who worked intermittently and inconsistently. For the housewife it meant that she needed assistance and urging by her family. In the hospitalized patients it meant working on the wards helping with care of other patients, raking leaves, etc. *Poor work adjustment* indicated that no work was done or was unsatisfactory when done.

The work adjustment for the 86 patients treated by prefrontal lobotomy was studied in follow-up. (At the time of the one to

*Greenblatt, M., Wingate, Marie, and Solomon, H. C.: Work Adjustment Five and Ten Years After Bilateral Prefrontal Lobotomy, New England J. Med. 250:856, 1954.

five year evaluation 45 of the patients were in the hospital and 41 out in the community. At the time of the five to ten year summary 51 were in the hospital and 35 in the community, 8 of the community patients having been re-admitted to the hospital and 2 of the hospitalized patients having been discharged in the intervening years.) The authors found the work adjustment of the 35 patients living in the community as follows. Before illness 33 or 94 per cent of the patients had a good or fair work adjustment. Preoperatively the number in this category had dropped to 9 or 26 per cent, and 25 showed poor work adjustment. One to five years after operation 29 or 83 per cent had a good or fair adjustment; at five to ten years there were 28 or 80 per cent maintaining this level. Before their illness the 51 hospitalized patients also showed a 94 per cent of good or fair work adjustment. Before lobotomy only 7 or 13 per cent maintained such a level of work adjustment. One to four years postoperatively 20 or 37 per cent had reached the good or fair work adjustment category, and at five to ten years 22 or 43 per cent were in the same class of work adjustment.

These findings from the paper quoted confirm the impressions held concerning lobotomy. Though it has been utilized to make violent patients more manageable in psychiatric institutions, this study shows also that it frees work potential, and may permit the discharge of patients back to their communities, relieving the increasing overcrowding of State hospitals with custodial cases.

R. H. K.



TENNESSEE'S RURAL HEALTH PROGRAM

Tennessee now has a rural health program which has been developed through discussions and planning with Dean J. H. McLeod and his staff of the Agricultural Extension Service of the University of Tennessee while in consultation with Mr. Tom Hitch and his staff of the Tennessee Farm Bureau Federation. This is not a program which the physicians of Tennessee are to run themselves, but one of cooperation with the farm organizations in work for their

mutual advantage. The Rural Health Committee of the Tennessee State Medical Association is to work largely as a liaison body between the farm or rural groups and the medical profession in the state.

One of the chief concerns which Dean McLeod expressed at a recent meeting was, not so much whether the doctors would cooperate in this program, but whether they would be informed of it. Point number one of the "Tennessee Ten" encourages the profession to "tackle Public Service problems and to take advantage of Public Relations opportunities that arise every day in our work and contacts." It should be pointed out that this program is "grass-roots" public service or, if you prefer, public relations.

There are some nine hundred community organizations in Tennessee working under more than three hundred Agricultural and Home Agents, all under the leadership of the Agricultural Extension Service of the University of Tennessee. There is perhaps already a committee in each of these organizations working on some health project, but some of them may need stimulation or guidance toward some useful end. This is where we fit in,—to help with the professional guidance in these plans.

To this end, Miss Sue Mayo has been appointed to the staff of the Extension Service as Nutritional Health Specialist. Her work is to be primarily with the farm organization leaders in the various counties. In this activity with the leaders there will also be work in some of the local community organizations. It is hoped that in her discussions interest in problems of health and nutrition will be stimulated and that she will be able to help the farm leaders organize work in this field. Assistance in providing the material to be presented will be given by our State Rural Health Committee and by the Council on Rural Health of the American Medical Association.

This organizational work will be carried out only in those communities which want it, when not in conflict with any other organization, and in those places where the medical profession cooperates with the program. Even though some of the better community organizations already have a health program, it was pointed out by Dean

McLeod that poor communities are just as eager to do something provided work is done on their level. He stressed working on the simple things—problems that are evident now. He feels that as work progresses in this field, interest will grow, questions will arise concerning the problems in a community, and consequently the people themselves may ask for further help, such as may be gained from a health survey. In other words, Dean McLeod has suggested that we start our program of rural health at the "grass-roots," through stimulation of interest in the community organization instead of organizing some large program from the state level and carrying it down to the community. This has been made the plan of the Rural Health Committee.

It will be necessary for the Rural Health Committee to bring the help of the medical profession into this work at the local level.* Ideally, we hope to have a Rural Health Committee in each component society of the state association to which problems can be referred. Each of these local committees should be under the direction of the member of the State Committee of that district. These local committees should be assisted by the Rural Health Committee of the State Association as a whole and by the state headquarters of the Tennessee State Medical Association. Practically, however, such channels may not be expedient at the present time. Therefore problems can be taken to our Public Service Director, Mr. Ed Bridges, in the headquarters office of the association, since our rural health program is a part of our public service program.

For assistance in these programs, the wives of members of the medical profession in the state may be called upon. The Board of Directors of the Auxiliary to the Tennessee State Medical Association has, in the past, expressed an interest in helping on the rural health program. It is felt that work in this field may introduce the stimulus necessary to bring about the organization of more auxiliaries in the more rural counties of the state.

WILLIAM N. COOK, M.D.

*The membership of this Committee under the chairmanship of Dr. Cook, of Columbia, is listed periodically in the JOURNAL of the Tennessee State Medical Association.

DEATHS

Dr. Myrtle L. Smith, 53, of Livingston was accidentally killed in an automobile accident on June 1. Dr. Smith was Health Director for Overton, Pickett and Fentress counties. She was a former medical missionary to the Belgian Congo.

Dr. Charles H. Moore, aged 32, Memphis, was accidentally killed at his home while cleaning an old gun. His death occurred on May 16. He was a resident surgeon at John Gaston Hospital.

Dr. John A. Hughes, Memphis, aged 72, died on May 19 in a Memphis Hospital.

Dr. Julian Judson Douglas, Memphis, died May 17 at his home at 59. He had been in ill health for a year.

Dr. Charles E. Barnett, Knoxville, died May 16 at his home, aged 69.

Dr. Thomas H. Phillips, Rockwood, aged 72, died May 21 at his home. He had been in ill health for several months. Dr. Phillips was Mayor of Rockwood for 16 years. He also was Commissioner of Education.

Dr. Hainan C. Busby, Columbia, Maury County Health Officer, died May 26 at 54 years. He had been in ill health for some time.

Dr. Sidney D. Klow, Memphis, died May 24 of a heart attack at age 45. He was Chief of Neuropsychiatric Service at Kennedy Veterans Hospital.

Dr. Henry A. Russell, Jr., 31, a former resident of Murfreesboro, died in Meridian, Miss., on May 23. He suffered a heart attack.

Dr. Ralph P. Townsend, former instructor of the Postgraduate Course in Psychiatry, as applied to the practice of medicine, died May 23, at the Research Hospital in Chicago of chronic myelogenous leukemia. Dr. Townsend conducted the course in Psychiatry in Tennessee during 1949-50-51.

Dr. Andrew J. Roby, Covington, died at his home on June 9th. He was 89. He practiced medicine in Tipton County for 49 years before he retired three years ago.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Consolidated Medical Assembly

A Symposium on Cardiovascular Complications of Pregnancy was held at its meeting on June 1. Three faculty members of the University of Tennessee Medical School presented the papers. They were Drs. John Adams, Hall Tackett, and Henry Turner.

Nashville Academy of Medicine and Davidson County Medical Society

At its meeting on June 8 at St. Thomas

Hospital, the following scientific program was presented: "Arsenic Poisoning with Unusual EKG Changes," by Dr. H. R. Foreman. Dr. R. M. Foote presented a paper entitled "Emotional Disturbances in Children"; and Dr. W. R. Cate Jr., discussed "Surgical Management of Duodenal Ulcer."

Knoxville Academy of Medicine

Dr. William K. Swann spoke on "Intra-cardiac Surgery" at the meeting on June 15.

Chattanooga-Hamilton County Medical Society

A Panel on Diabetes was presented at the meeting of June 3. Dr. A. S. Easley was moderator, the panel consisting of Drs. R. W. Myers, Pope Holliday, R. C. Thompson and I. L. Arnold. Dr. H. D. Hickey presented a case report on a patient with dual vagina and uteri.

Dyer, Lake and Crockett County Medical Society

The Society met on June 2 at Reelfoot Lake for the purpose of sponsoring a local chapter of the Woman's Auxiliary of the Tennessee State Medical Association. Doctors and their wives from the adjacent counties were invited to attend. Mrs. Roy Douglas of Huntingdon and Mrs. Howard Gray of Memphis represented the Woman's Auxiliary of the State Medical Association.

Roane County Medical Society

At the June 29 meeting Mr. Clyde W. Key, Knoxville attorney, talked on the "Prevention and Defense of Malpractice Suits."

NATIONAL NEWS

Physicians in Draft priorities I and II and those in Priority III 32 years of age or under, in all probability, will be called to duty between July 1 and June 30 of 1955, in the opinion of the National Advisory Committee to Selective Service.

Draft eligible doctors finishing their internships and residencies are urged to apply at once for commissions.



With 7,276 new doctors licensed last year and

only 3,855 deaths in the professions, the total number of U. S. physicians grew to 218,522. Most encouraging increase was among private practitioners, to a total of 156,333 (one for every 1,020 people), a gain of 4,970—including many released from military service.

MEDICAL NEWS IN TENNESSEE

West Tennessee Medical and Surgical Association

More than 100 West Tennessee physicians and surgeons were in attendance at the 60th annual meeting of the West Tennessee Medical and Surgical Association held at Jackson on May 20. Dr. Forest MacAnulty of Bolivar was elected President.

Dr. G. Barton McSwain of Nashville delivered the dinner address on "Malignant Disease in Individuals in the First Two Decades." Other speakers and their topics included Dr. McCarthy DeMere of Memphis, who spoke on "Recent Advances in Plastic Surgery"; Dr. D. A. Johnson, Memphis, "Neurologic Diseases of Infancy and Adolescence"; Dr. Stanley Crawford, Jackson, "New Concepts in the Treatment of Erythroblastosis Foetalis"; Dr. Oscar McCallum, Henderson, "Tension"; Dr. Swan Burrus, Jr., Jackson, "Surgical Emergencies in Gynecology"; Dr. E. P. Kingsbury, Jr., Union City, "Office Treatment of Common Pediatric Disorders"; Dr. William E. Lawrence, Bolivar, "Present Day General Practitioner's Role in Obstetrics."

Tennessee Valley Medical Assembly

Invitations have been sent to more than 22,000 physicians and surgeons in the South to attend the annual Tennessee Valley Medical Assembly in Chattanooga on September 27 and 28. The two day meeting will feature addresses by outstanding medical authorities from all sections of the nation.

University of Tennessee College of Medicine

Laboratory studies on sickle cell anemia will be continued through a research grant renewed by the Herbert Herff Foundation.



A postgraduate program in Emergency Surgery and Acute Injuries will be offered

July 28-30, in cooperation with John Gaston Hospital. The course will be under the direction of Dr. Harwell Wilson, chief of the Division of Surgery, and will consist of ward rounds, demonstrations and lectures.



The Atomic Energy Commission has awarded \$10,843.00 to Dr. Lester Van Middlesworth of the Department of Physiology for the study of "Iodine Metabolism in Human Beings and Experimental Animals," with special relation to goiter and methods of preventing the condition.

Erlanger Hospital Opens New Wing

A new wing of Erlanger Hospital was dedicated at ceremonies at the hospital on May 17. Dedicatory ceremonies held at a buffet dinner in the hospital cafeteria included talks by Dr. R. H. Hutcheson, State Commissioner of Health, Mayor P. R. Olgiati, and other officials.

Vanderbilt University School of Nursing

The Vanderbilt University School of Nursing is making a Pilot Study teaching Cancer Nursing for the purpose of "teaching a broad concept of Cancer Nursing and considering it in relation to other diseases in the nursing approach to health problems in the community." The project is sponsored and supported by the National Cancer Institute. It is a five year project which was begun July 1, 1953. Four other nursing schools are participating in the program.

Upper Cumberland Medical Society

The Sixtieth Annual Meeting of the Society was held in Red Boiling Springs on June 29-30. Dr. C. S. McMurray, Nashville, presided as President, and Dr. A. T. Hall, Lebanon, was in charge of arrangements.

Topics discussed and essayists were: "Early Diagnosis of Carcinoma of the Prostate," Oscar Carter, M.D., Nashville; "Surgery of the Breast for Carcinoma," Oscar Noel, M.D., Nashville; "Pheochromocytoma with Case Report," William Cate, M.D., Nashville; "Tobacco and Carcinoma of the Lung," Walter L. Diveley, M.D., Nashville; "Difficult Differential X-Ray Diagnosis of Carcinoma of Lung," John H. Beveridge, M.D., Nashville; "Precancerous Lesion of Colon," D. W. Smith, M.D., Nashville; "Diag-

nosis of Brain Tumor," Arnold M. Meirowsky, M.D., Nashville; "Fracture Dislocation of Neck," John J. Killeffer, M.D., Chattanooga; "Bleeding Uterus," C. C. Howard, M.D., Glasgow, Ky.; "Current Calculus Disease of the Kidney," John M. Tudor, M.D., Nashville; "Plastic Management of the Common Congenital Deformities," Kirkland Todd, Jr., M.D., Nashville; "Some of the Newer Antibiotics," Thayer S. Wilson, M.D., Carthage; Presidential Address: "Responsibility of the Profession in Examination for Cancer," C. S. McMurray, M.D., Nashville; "Treatment of Stones in the Urinary Tract," Henry S. Harris, M.D., Bowling Green, Ky.; "Trend in Chemotherapy of Tuberculosis," H. R. Anderson, M.D., Nashville; "Fine Points and Failings in the Art of Anaesthesia," R. C. Kash, M.D., Lebanon; "Drug Addiction," R. C. Gaw, M.D., Gainesboro; "Highlights of Training with Professors Lorenz Bohler, Philip Erlacher, George Hohmann, Oscar Scaglietti," Donald M. Qualls, M.D., Livingston.

Tennessee Psychological Association

The Association announces the formation of the Committee on Ethical Practices consisting of the following: Beverley E. Holaday, Ph.D. (Chairman), Professor of Educational Psychology, University of Tennessee; Cecil K. Harbin, Ph.D., Chief, Psychologists, Veterans Administration Mental Hygiene Clinic, and Stanley Webster, Ph.D., Clinical Psychologist, Eastern State Hospital, of Knoxville; Richard F. Martin, Ph.D., Chief Psychologist, Thayer Veterans Administration Hospital, Nashville; and Milton C. Addington, Ph.D., Psychology Section, Kennedy Veterans Administration Hospital, Memphis.

This Committee has been charged with the responsibility of investigating complaints concerning ethical practices in the field of psychology. It will utilize as a guide the "Ethical Standards of Psychology" filed with the Secretary of State. It requests the aid of the profession in referring to the appropriate regional representative of the Committee any complaints or inquiries concerning psychologists or individuals who claim to be psychologists.

PERSONAL NEWS

Drs. E. W. Tipton, T. B. Yaneey, A. M. Wallace, A. D. Miller, all of kingsport, were recently presented plaques honoring them for 50 years in the practice of Medicine.

Dr. Forest MaeAnulty of Bolivar has been elected President of the West Tennessee Medical and Surgical Association. Other officers elected were **Dr. J. K. Weleh**, Brownsville, First Vice-President; **Dr. W. G. Raby**, Paris, Second Vice-President; **Dr. C. C. Stauffer**, Jackson, Secretary-Treasurer; and **Dr. G. B. Wyatt**, Jackson, Program Chairman.

Dr. Walter J. Johnson, Pulaski, has been reappointed by Gov. Frank Clement to the State Board of Medical Examiners.

Dr. William P. Hardy, Oak Ridge, and **Dr. James B. Webb** of Lake City have been called into the Armed Services.

Drs. J. C. Moore and **Calvin Bishop** of Dyersburg have opened an office at Friendship.

Dr. H. B. Moore of South Pittsburg has completed a Postgraduate Course in the Cook County Graduate School of Medicine in Chicago.

Dr. William S. Taylor has opened an office for the practice of medicine in Cookeville.

Dr. John M. Claridy has announced that he will open an office for the practice of medicine in Carthage.

Dr. Wendell Bennett, Columbia, is a candidate for Magistrate to the County Court in the Ninth (Columbia) District.

Dr. John S. Hawkins, Springfield, has been reappointed to the State Board of Medical Examiners.

Dr. John W. Erwin of Blountville, Sullivan County Health Officer, has succeeded **Dr. W. L. Roberts** of Memphis as President of the Tennessee Public Health Association.

Dr. Paul C. Thompson has opened an office in Chattanooga for the practice of Orthopedic Surgery.

Dr. John R. Thompson, Jr., Jackson, recently addressed the newly organized Ninth District Division of the Tennessee Pharmaceutical Association.

Dr. Henry F. Hunt, Madisonville, has been appointed to the position of Assistant Chief of Staff of Geisinger Memorial Hospital and Foss Clinic, Danville, Pennsylvania.

Dr. J. B. Black, Murfreesboro, is the new President of the Middle Tennessee Medical Association. **Dr. Robert McCowan**, Fayetteville, was named President-Elect.

Dr. Burton Howard, Clarksville, has been elected President of the Lions Club.

Dr. William L. Taylor, Lewisburg, who has practiced medicine in that city for the past two and one-half years, moved to Nashville on July 1 to be connected with Thayer V.A. Hospital.

Dr. D. C. Maddox of Rives has been elected

"Farmer of the Week" in the Seventh Civil District.

Dr. H. B. Boyd, Memphis, recently addressed the American Orthopedic Association in Brettonwoods, N. H.

Dr. Ralph M. Kniseley, Oak Ridge, has been elected Chairman of the Oak Ridge Hospital Organization.

Dr. R. E. Key, Carthage, was recently honored for the completion of 50 years in the practice of medicine.

Dr. William R. Cate, Jr., announced the opening of offices for the practice of surgery at Nashville.

BOOK REVIEW

The Book of Health. Compiled and edited by **Randolph L. Clark, Jr., M.D.**, and **Russell W. Cumley, Ph.D.**, New York, 1953. Elsevier Press, Inc. 836 pages. 1,400 illustrations. Price \$12.50 (20% professional discount).

This is a remarkable book from several viewpoints. It has been prepared for the intelligent layman. Its publication is indicative of the interest in medicine outside the professional field. It offers proof that technical knowledge can be presented in an interesting manner to an intelligent reader. This is *not* a "home doctor book" for it does not outline what is to be done in treatment.

The physicians contributing sections to this book are 242 in number and represent outstanding men of authority in their particular fields.

The first chapter, on Life Begins, includes embryology and development in utero. This is followed by chapters on The Child and on The Body portraying growth and development and discussing the processes of nutrition, metabolism, etc. The fourth chapter describes the various disease producing organisms, viral, bacterial and the like. The following fourteen chapters cover the various organ systems. Here there is a presentation of anatomy and physiology of the organs followed by a description of disorders and diseases of each. Subsequent chapters take up disorders of the mind, the aging process, nutrition, injuries and first aid, sanitation, medicolegal items, medical history and the medical profession.

One of the beauties of the book is the salting of a'most every page by a small portrait and biographical note, concerning his contribution to medical science, of a pioneer in the advancement of science. Thus the reader is given the feeling of a living science that has grown and continues to grow. The intelligent reader thereby learns that medical knowledge has not sprung forth full-blown like Minerva from the brow of Jupiter, rather that it has been a long and laborious process, far from complete as yet. In addition there are many interesting illustrations of historical interest portraying former methods of treatment.

The illustrations to amplify the text are excel-

lent and well chosen consisting of line drawings, photographs and microphotographs. Some are in color. The textual matter has been so edited that it presents technical information in a most readable and interesting fashion. It presupposes a reader of intelligence and some education providing a rather broad vocabulary.

This volume is the answer to a demand for medical knowledge by the lay person. The past decade and more has seen the cloak of mystery which enshrouded things medical blown aside by professional and semi-professional writers in news columns and lay magazines. All too frequently these have led to misinformation and frequently have been the unbalanced and ill-considered enthusiastic accounts of medical progress. Often they have been a nuisance to the doctor as the patient waves a popular little lay magazine in his face and demands the new treatment. Here is a book to be recommended with the authority of its contributors to back it. It should make a cooperative patient.

This is a valuable volume for the nurse, the office helper who has many questions, the dentist, and the medical technician.

The reviewer plans to use this book as a gift to certain lay friends who have an intelligent interest in medical problems. (The 20 per cent professional discount should stimulate the physician to use this book as a personal gift for selected friends.)

R. H. K.



The Nursing Mother: A Guide to Successful Breast Feeding. By Frank H. Richardson, M.D. New York, 1953. Prentice-Hall, Inc. Price \$2.95.

This book is based on the well documented fact that breast milk is the natural and best way to feed the great majority of infants. Information included is designed to encourage breast feeding and to give the normal woman all the knowledge she needs to nurse her baby. That a genuine desire or attitude to breast feed is the most important factor conducive to successful nursing and that most mothers are able to nurse their infants satisfactorily is emphasized. The advantage of breast feeding, including its psychological values, are presented.

Specific instructions concerning prenatal preparation of the breast, manual emptying of the breasts, and actual technique of breast feeding are outlined in detail. Many logical points relative to feeding schedules and length of nursing time are given but the reviewer is not in agreement with

Dr. Richardson's concept of the importance of regular bowel habits on the part of the infant as regards successful breast feeding. An enthusiastic attempt is made to dispel many of the superstitions and false notions about breast feeding such as loss of breast contour and the need for excessive eating while nursing.

The value of the book is enhanced by the inclusion of a comprehensive list of frequently asked questions and their answers. Perhaps the only criticism of this book is the over-enthusiastic endorsement of breast feeding with little or no reservation. The book is a helpful reference for all physicians and nurses concerned with the care of infants. Its greatest value probably is as recommended reading for expectant mothers and mothers with newborn infants.

H. D. RILEY, JR., M.D.

ANNOUNCEMENTS

The 37th Annual Conference of the American Occupational Therapy Association will be held at the Shoreham Hotel, Washington, D. C., in October. The meetings will be as follows:

October 16-17—Preliminary Meetings

October 18-19—Institute-Interpersonal Relations

October 20-21-22—General Conference—
Theme: "Capitalize Your Assets"



A Course in "Newer Developments in Cardiovascular Diseases" will be given at the Mount Sinai Hospital, New York, October 11th through 15th, 1954, under the auspices of the American College of Physicians. As the title implies, the recent advances will be stressed. Dr. Arthur M. Master and Dr. Charles K. Friedberg will direct the course and prominent cardiologists and cardiac surgeons will participate.



The Annual Convention of the National Society for Crippled Children and Adults is scheduled for November 3-5, 1954, at the Hotel Statler, Boston. The meeting is one of international importance which will bring together authorities in all the fields of work relating to rehabilitation of crippled children and adults. For further information write The National Society for Crippled Children and Adults, 11 South La Salle Street, Chicago 3, Illinois.

Clearview

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Locations Wanted

A 26 year old, married, physician, M.D. Tennessee, 1949, draft exempt, desires associate relationship for general practice and general surgery. LW-46

A 54 year old, married physician, Protestant, graduate University of Minnesota, board certificate in Radiology, desires smaller to medium sized community. Available immediately. LW-50

A 34 year old, married physician, Protestant, graduate University of Cincinnati, 1943, priority 4, desires clinic, preferred community 10,000 up, General Practice. Available March 1, 1954. LW-51

A 42 year old, married physician, Roman Catholic, graduate University of Vermont College of Medicine, priority 4, Specialty Urology 100%, desires associate or location in community of 100,000 preferably. Available March or April. LW-62

A 34 year old, married physician, Protestant, graduate University of Tennessee. Previous military service October, 1945-September, 1947. Desires community 15,000-50,000. Specialty, General Surgery. Available either July, 1954, or January, 1955. LW-63

A 29 year old, married physician, Protestant, graduate University of Tennessee, Military status Priority IV in September. Desires general practice or near large city (100,000 or more). Available immediately. LW-64

A 36 year old, married physician, Roman Catholic, graduate Marquette University, Milwaukee, Wis., draft exempt, Specialty Surgery in middle sized community. Available immediately. LW-65

A 29 year old, married physician, Episcopal, graduate Harvard Medical School, military status, 25 months active duty USAF. Pathologist for a single general hospital of 150-300 beds. Available immediately. LW-66

A 33 year old, married physician, Protestant, graduate University of Illinois, military status, deferred, no previous service. Desires general surgery in community above 20,000. Available immediately. LW-67

A 30 year old, married physician, Protestant. No obligated military service. Graduate of University of Oklahoma, beginning practice in Urology specialty. Community preferred 35,000 to 1,000,000. Available immediately. LW-68

Man and wife team interested in Tennessee practice where service needed, either by themselves, in group practice or associated with older doctor. Man 35, Georgia native, Emory graduate, soon board eligible in OB-GYN; has taken part 1 American Board of Surgery exam. Wife, 33, Maryland graduate, interested surgery. Both Episcopalians. Prefer 20,000 population upward. Available April 1, after military discharge. LW-69

A 31 year old, married physician, Protestant, at present in U. S. Army until June, Graduate George Washington University, Internal Medicine with specialty in Cardiology. Prefer community 10,000 or over. Available July. LW-70

Married physician, Protestant, graduate University of Tennessee, at present in U. S. Air Force. Desires general practice in or near large city. Available September. LW-71

A 26 year old, married physician, Catholic, graduate Louisiana State University, 1952, priority 4, desires clinic for general practice in community 4-10,000. Available immediately. LW-73

Married physician, 34 year old, Episcopalian, graduate University of Maryland, Board Certificate American Board Obstetrics and Gynecology, military status—not eligible—served during World War II. Community preferred 30,000-60,000. Available late fall or winter 1954. LW-75

A 28 year old, married physician, Protestant, graduate University of Tennessee 1949, three years training in general surgery, priority 4, completing residency June 1954, available July 1, 1954. Desires community 20-100,000. LW-76

A 38 year old, married physician, Catholic, priority 4, graduate Hahnemann Medical College, Philadelphia, Pa., GP-Surgery, community preferred, 5-10,000. Available two months after selection of community. LW-77

A 27 year old, married physician, Catholic, priority 4, graduate Loyola University, Chicago, 1952, wants locum tenens near Memphis July 1-September 30. General Practice. LW-78

A 31 year old, married physician, Protestant, graduate University of Louisville 1953, priority 4, desires clinic, would consider partnership basis, general practice, community preferred 1500-2500. Available July 1, 1954. LW-79

A 26 year old, single physician, Protestant, graduate University of Tennessee, 1954, priority 4, desires temporary practice between graduation and internship, assistant in general practice. Available March 26, 1954. LW-80

A 32 year old, married physician, Hebrew, graduate University of Iowa College of Medicine, Board Certificate held in Urology, priority 4, desires clinic, assistant or associate, community 25,000-500,000. Available July 1, 1954. LW-83

A 31 year old, married physician, Catholic, graduate Ohio State University 1947, recently discharged from service, desires general surgery in community 10,000-50,000. Available September 1st. LW-84

A 29 year old, married physician, three children, Southern Presbyterian, graduate Bowman Gray School of Medicine 1946, inactive Status. List. USNR; Lt. (j.g.), MCR, Specialty Internal Medicine. Would consider clinic, assistant or Associate. Community preferred 25,000-50,000. Available June, 1954. LW-86

A 31 year old, married physician, Protestant, graduate Harvard Medical School, eligible for American Board of Surgery, Military status, 5-A, Naval Medical Corps 2 years. General Surgery, desires clinic,

community 10,000 or larger. Available August 1st. LW-88

A 30 year old, married, physician, Protestant, graduate Washington University School of Medicine, Priority IV, 2 years residency training-internal medicine; 1 year Gastroenterology (all approved). Desires clinic, assistant or associate, community 30,000 or more. Available July 1st. LW-91

A 32 year old, married physician, Lutheran, graduate Temple Medical School, priority IV, Certified by American Board of Surgery, desires Associate first choice, clinic second, in community 50,000 to 100,000. Available May 1. LW-94

A 29 year old, married, physician, Protestant, graduate George Washington University, priority IV, desires general practice in community 3,000-10,000, preferably with open staff hospital. Would consider if in small general practice clinic hospital. Available July 1. LW-96

A 42 year old, married physician, Catholic, graduate Tulane, Draft exempt. Specialty Internal Medicine, desires clinic, assistant or associate in community 50,000 or over. Available August, 1954. LW-98

A 33 year old, single physician, Protestant, graduate Faculty of Medicine, McGill University, Montreal, Canada. Priority IV. Medicine and surgery, clinic, assistant or associate in community 5,000-10,000. Available July 15. LW-100

A 32 year old, married, three children, graduate Vanderbilt University, Certified by American Board of Psychiatry and Neurology. Priority IV. Interested in private, partnership or group practice. LW-102

A 31 year old, married physician, Catholic, graduate University of Tennessee, Priority IV, specialty training three years general surgical residency. Community 25,000 or more. Available immediately. LW-103

A 32 year old, single, Episcopalian, graduate Louisiana State University. Desires general practice in community 40,000 to 100,000. Available July 15, 1954. LW-105

A 32 year old, married physician, Protestant, graduate Duke University, Priority IV. Would consider clinic, assistant or associate. Desires general practice in community 4,000 to 10,000 preferably East or Middle Tennessee. Available July 1st. LW-107

A 32 year old, married physician, graduate University of Illinois, Board eligible in internal medicine, completing period of service in Navy. Prefers clinic. Community greater than 6-8 thousand. Available October. LW-109

A 32 year old, married physician, Protestant, graduate University of Michigan, Diplomate American Board of Surgery. Category IV. Would like association in community 20,000 to 150,000. Available immediately. LW-112

A 26 year old graduate University of Tennessee, married, Priority 5-A. Desires general practice partnership or alternate, industrial or salaried position o.k. Community 5,000 to 10,000. LW-116

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Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

SEPTEMBER, 1954

Number 8

Symposium: Diseases of the Thyroid Gland

The development of antithyroid drugs and the introduction of radioactive iodine in the past decade or so has influenced the management of diseases of the thyroid gland, whether it be medical or surgical. This reorientation has been brought out in the symposium.

RADIOIODINE IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE THYROID GLAND*

BEVERLY T. TOWERY, M.D.,† Nashville, Tenn.

The unique association between the thyroid gland and the metabolism of iodine had been established before the first radioactive isotope of this element was prepared by Fermi in 1934. Intensive investigation of the exact nature of the thyroid hormone culminated in Kendall's isolation of crystalline thyroxin and its ultimate synthesis by Harrington and Barger in 1927. With the proof of the physiologic activity of synthetic l-thyroxin the connection between iodine and the thyroid was clearly apparent.

Inasmuch as iodine is an essential component of thyroxin it seemed likely that a severe dietary deficiency of this element might constitute the limiting factor in hormone synthesis and account for endemic goiter and cretinism. This line of reasoning also implied that there was a close relationship between the rate of iodine utilization and the rate of hormone production by the thyroid. Although this hypothesis seemed tenable, and was supported by certain observations of David Marine, its final proof could not be established by chemical means. Analytical methods were incapable of measuring thyroidal iodine metabolism unless relatively large amounts of the halide were administered. Such pharmacologic doses of

iodide so altered thyroid function that none of the intricacies of thyroid physiology were revealed.

It is not surprising that, having reached the limitations of classical chemistry, investigators turned eagerly to the radioactive isotopes of iodine in their search for more sensitive methods of studying thyroid function.

Radioiodine Tracer Studies

The radioactivity of the isotope will permit its detection and measurement in the thyroid or biological fluids even though the weight of the isotope administered is infinitesimal. For example, a 50 microcurie tracer dose of I^{131} is provided by approximately four-tenths of a micromicrogram of the isotope. It is obvious that this minute trace of radioiodine will have no significant chemical effect upon thyroid activity. Whereas the chemical effects are nil, the radiation effects limit the amount of radioiodine that can be used in tracer studies. It is mandatory that the least possible amount of the isotope be utilized so that the ionizing radiation will produce little or no alteration in cellular function.

One of the most important achievements of the tracer method is that it permits the study of the rate of change in an intact biological system. A sensitive counting tube placed over the thyroid gland will permit the measurement of radioactivity within the thyroid at various intervals after the

*Read before the Meeting of the Tennessee State Medical Association, April 21, 1954, Nashville, Tenn.

†From the Department of Medicine, Vanderbilt University School of Medicine, and Vanderbilt University Hospital, Nashville, Tenn.

administration of the isotope and the rate of iodine accumulation can thus be determined.

By the application of the isotope tracer technic to the study of iodine metabolism many of the earlier discoveries have been verified and new ones disclosed. The thyroid epithelium has been found to have an amazing affinity for iodide which serves to establish within the gland the high concentration of this ion which is a prerequisite for subsequent hormone synthesis. Thiocyanate has the unique ability to block the iodide-trapping mechanism, whereas thiourea derivatives effectively prevent hormone synthesis but do not abolish the affinity of the gland for iodide ion. It is for this reason that the mechanisms of iodide-trapping and hormone biosynthesis are regarded as being fundamentally different. It is believed that the thiourea derivatives inhibit biosynthesis by preventing the oxidation of iodide and, therefore, the iodination of tyrosine.

The identification of l-tri-iodothyronine by Gross and Pitt-Rivers in 1952 is one of the most important achievements to have resulted directly from the experimental use of radioiodine. This compound has remarkable physiologic activity and probably represents the ultimate active form of the thyroid hormone.

By means of the basic studies just mentioned it was immediately apparent that radioactive iodine offered much promise in the study of human thyroid function and this use of the isotope increased rapidly as I^{131} became available.

Experience has now shown that the rate of accumulation of radioiodide by the thyroid is almost always proportional to the rate of thyroid activity. In other words, sustained overproduction of thyroid hormone results in clinical thyrotoxicosis and the fundamental abnormality is disclosed by an excessive rate of iodide utilization by the thyroid gland. Similarly, in hypothyroidism the presence of inadequate thyroid epithelium leads to a decline in the production of thyroid hormone and this deficiency may be corroborated by an abnormally low rate of radioiodine uptake. Individuals with normal thyroid function will, except under unusual circumstances, exhibit radio-

iodine tracer uptakes that fall between the two extremes which are observed in hypothyroidism and hyperthyroidism.

Diagnosis by the Tracer Technic

By the tracer technic now in use in our laboratory the net accumulation of radioiodide by the thyroid after an interval of 24 hours is approximately as follows. Nearly all euthyroid individuals concentrate from 10 to 50 per cent of the tracer dose in the thyroid region. Most, but not all, hypothyroid individuals exhibit an uptake of less than 10 per cent, whereas hyperthyroid patients regularly accumulate more than 50 per cent. In certain patients with exophthalmic goiter, the thyroid exhibits an amazing affinity for I^{131} and the uptake after 6 hours may be somewhat higher than at the 24-hour interval so that as much as 85 per cent of the dose is trapped by the thyroid. However, certain elderly individuals with nodular toxic goiters, but with unequivocal thyrotoxicosis, may show only a moderate increase in the affinity of the thyroid for iodine.

In the absence of prior medication or iodine-deficient goiter, the demonstration of an abnormally high uptake of radioiodine is strong presumptive evidence in support of a diagnosis of thyrotoxicosis. Such is not the case in hypothyroidism. To be sure a very low uptake of radioiodine is suggestive of inadequate thyroid function but is by no means proof of that fact. Rarely patients with classical myxedema exhibit I^{131} uptakes that are perfectly normal (as high as 26 per cent in one patient). A much more compelling reason for caution in the interpretation of a low radioiodine uptake is the fact that prior iodine medication in any form may markedly suppress the iodide-trapping mechanism of an otherwise perfectly normal thyroid.

No attempt will be made to discuss the various technics which have been devised to establish the functional status of the thyroid of the use of radioiodine. Initially many studies were devoted to the measurement of the net renal excretion of I^{131} . When the rates of excretion and thyroidal accumulation of radioiodide were correlated, it became apparent that there was a

brisk competition between the thyroid gland and the kidneys in disposing of iodide. Consequently the tracer technics which depend upon urinary assays define hyperthyroid individuals as those who excrete the least proportion of the tracer. On the other hand an athyreotic patient will eventually excrete virtually all of the administered isotope.

The interpretation of tracer data is greatly facilitated by a knowledge of the concentration of protein-bound iodine in the plasma. Although the latter is probably the most precise means of evaluating net thyroid function, its precision is often enhanced by correlative radioiodine studies.

For example, an elevated PBI in association with an elevated I^{131} uptake affords positive evidence of hyperthyroidism. Similarly, a very low PBI and I^{131} uptake confirm a diagnosis of hypothyroidism just as normal findings establish the physiological range of thyroid function.

On the other hand a elevated PBI and an excessively low I^{131} uptake constitute almost certain evidence for the recent ingestion of one or more iodine-containing drugs. Under these circumstances no statement as to the pre-iodine status of thyroid function is permissible from such data.

Similarly, a low PBI and high I^{131} uptake suggest the recent cessation of prolonged antithyroid (propylthiouracil, Tapazole) therapy and do not establish the status of thyroid function prior to such therapy.

A normal PBI and very low uptake are most commonly seen in patients with iatrogenic hypothyroidism whose normal iodide-trapping mechanism is inhibited by desiccated thyroid therapy. In the presence of such therapy one cannot establish the diagnosis of myxedema by means of chemical or radioiodine studies unless thyrotropin is utilized.

It is readily apparent that no reliance can be placed upon radioiodine traced studies if iodine-containing compounds have been taken. Failure to recognize this fact may lead to serious misinterpretation, especially if the physician is unaware of such medication.

In thyroid disease the PBI and radioiodine uptake tend to be altered in the same direc-

tion. However, in acute or subacute non-suppurative *thyroiditis* this is apparently not true. During the past year opportunity has arisen to study patients with this disorder. In all seven there was an amazingly low uptake of radioiodine at a time when the constitutional manifestations of the disease suggested some of the features of thyrotoxicosis. The PBI was definitely elevated in four and within the high normal range in the remaining three patients. Although the metabolic rate tended to be somewhat elevated, the presence of low-grade fever lessened the significance of this finding.

The constant feature of the disease was the very low radioiodine uptake by the thyroid which was found invariably, regardless of the duration of symptoms or the severity of the involvement of the thyroid gland at the time of the tracer study. An elevation of the PBI appears to be a less constant feature of the disorder but tends to occur early in the more severe cases at a time when pain and tenderness in the thyroid are most marked.

It is evident that radioiodine tracer studies provide information of considerable importance in differentiating non-suppurative thyroiditis from other painful swellings of the thyroid gland. It also provides a useful means of evaluating the completeness of recovery of thyroid function. Two of our patients were restudied several months after all clinical evidence of thyroiditis had subsided. In both, the uptake of radioiodine had risen to normal values, the PBI was normal and no goiter remained.

Treatment with Radioiodine

The diagnostic usefulness of I^{131} depends upon the ability of the thyroid cell to concentrate iodide as outlined above. If the tracer dose of radioiodine is increased a thousandfold, i.e., if millicuries are administered instead of microcuries, it is quite easy to deliver intense ionizing radiation to the thyroid cells and to cause their ultimate destruction. The ease of destruction of thyroid tissue by this means depends primarily upon the avidity of the cells in accumulating the isotope. Because of this fact the destruction of a diffusely hyperplastic goiter requires considerably less radioiodide than

does a normal thyroid. Similarly a thyroid cancer may have so little affinity for radioiodide that enormous doses (100 to 200 mc.) have little effect upon the neoplastic tissue.

The successful use of radioiodide in the treatment of hyperthyroidism is verified by many reports dealing with relatively large numbers of patients. Our own experience with this form of therapy is in agreement with studies already reported in the literature. Our data are now relatively complete on 42 patients; 36 are now euthyroid while four have developed hypothyroidism. Two patients are still under therapy. Five individuals required three or more doses of I^{131} and one is still mildly thyrotoxic, although much improved, after seven therapeutic attempts.

The following features, in our opinion, determine the selection of thyrotoxic patients for treatment with radioiodide:

(1) No pregnant woman should be given therapeutic doses of I^{131} . After the fourteenth week of gestation even tracer doses are precluded.

(2) It is probably not wise to treat patients who are under forty years of age except under unusual circumstances. It has not yet been established absolutely that I^{131} has no delayed carcinogenic effect.

(3) Nodular toxic goiters are difficult to treat successfully with radioiodine, and no goiter containing a solitary nodule should be treated with radioiodine because of the risk of overlooking thyroid cancer.

(4) In addition to clear-cut evidence of thyrotoxicosis an abnormally high uptake of radioiodine must be demonstrated to establish the affinity of the goiter for iodide and to permit calculation of the therapeutic dose. This also allows one to establish the fact that prior iodine medication has not markedly suppressed the uptake and, therefore, the therapeutic efficacy of the isotope.

(5) If the patient is severely thyrotoxic, it is often wise to bring the disease under control by the use of an antithyroid drug before I^{131} is given. The abnormal avidity of the goiter for I^{131} will return within two to three days after cessation of the drug and radioiodine therapy can be carried out successfully.

(6) The response to radioiodine therapy

is rather slow and the full effect of treatment cannot be established until an interval of about three months has elapsed. All patients who receive radioiodine must be followed carefully for several months in order to evaluate the ultimate outcome. Transitory hypothyroidism occurs in some individuals during the second to fourth month after therapy before a euthyroid state is finally established. A patient who remains completely euthyroid 6 to 9 months after I^{131} therapy is very unlikely to exhibit a subsequent recrudescence of thyrotoxicosis.

(7) A postoperative recurrence of thyrotoxicosis is probably the most clear-cut indication for therapy with I^{131} in view of the hazards of repetitive thyroid surgery.

The hope that I^{131} would prove to be a powerful agent in the therapy of thyroid cancer has not, in our experience, been realized. To be sure, in rare instances a well differentiated neoplasm may exhibit sufficient avidity for the isotope that it may be employed with reasonable success. However, the great majority of thyroid cancers do not compete successfully with the normal thyroid in their accumulation of radioiodide. It may be possible by means of total thyroidectomy and the use of thyrotropin to augment the I^{131} uptake of cancer tissue to permit therapy by internal radiation. To date, our attempts along these lines have been disappointing. The treatment of thyroid cancer still depends primarily upon surgery and appropriate roentgen therapy.

Summary

In summary, one cannot fail to recognize the importance of the diagnostic radioiodide tracer in the detection and study of thyroid disorders. Certain diseases such as subacute thyroiditis exhibit unique features when examined by this means, and other unknown peculiarities of thyroid function will almost certainly be disclosed.

Radioiodide is a potent therapeutic agent in the treatment of hyperthyroidism and its success in this role depends largely upon the care with which patients are selected for such therapy. It is urged that all such individuals receive the benefit of prolonged and careful evaluation after treatment. In the

case of thyroid cancer the therapeutic usefulness of radioiodine is seriously limited

by the failure of the neoplastic cells to concentrate significant quantities of the isotope.

THE MEDICAL MANAGEMENT OF HYPERTHYROIDISM*

JOHN DAVIS HUGHES, M.D.,[†] Memphis, Tenn.

Certain fundamental aspects of the medical management of hyperthyroidism should be mentioned before we consider the use of specific drugs for this disorder. These include physical and mental rest, diet, sedatives, management of cardiac complications if present, and continued reassurance of the patient. To rely on antithyroid drugs alone is injudicious, like attacking the enemy without supporting troops. Before the advent of such specifics older measures tided many a patient through the exacerbations of a disease in which remissions so commonly occur spontaneously.

General Management

Rest is a *sine qua non* in the therapy of hyperthyroidism. If it cannot be achieved in the home, the patient should be hospitalized. A sedative such as one-half grain of phenobarbital four times daily should be prescribed to take the edge off of the nervousness which is so constant in this disease, and a larger dose of this or other sedative at bedtime to insure adequate sleep. Complete bed rest is not desirable except in the most severe cases.

The diet should be high in calories, protein, carbohydrate, and vitamins. Although occasionally anorexia is present in this disease, most patients have a voracious craving for food, due to their excessive metabolism, and cannot eat enough to replace the calories they are burning. In addition to the usual three meals, generous snacks at mid-morning, mid-afternoon, and bedtime are needed. Protein supplements can be added easily to fruit drinks to increase the consumption of these important building blocks. At least one gram of protein should be supplied per kilogram of body weight per day, and sometimes it may be advisable

to provide two grams. A moderate amount of fat, especially that contained in dairy products such as cream and butter, is necessary for protection of the liver and is an excellent source of calories, but too much fat may well aggravate the diarrhea which is so often a part of the thyrotoxic state. Due to the increase in metabolism there is increased need for vitamins, especially vitamins A, B, C, and D, sometimes double or treble the requirements of the euthyroid person. Hence, a well balanced multiple vitamin preparation is very much in order in this disease.

In thyrotoxicosis calcium is depleted from the body in direct ratio to the severity of the disease. Therefore, this vital mineral must be replaced by six to twelve grams of calcium lactate or calcium gluconate by mouth daily, or its equivalent in other calcium preparations.

A commonly neglected point in the treatment of hyperthyroidism is attention to the liver. It has been shown that acute and chronic changes leading to cirrhosis, with or without liver failure, often occur in this disease.¹ Schmidt, et al.,² and Weller³ have contributed materially to an understanding of the pathology and clinical events in this complication. Under the incessant whip-lash of thyroxin stimulation the liver literally works itself to death. Acute parenchymal degeneration and fatty changes occur first, and then atrophy and cirrhosis. In these cases one should always test liver function. Glucose intravenously, a high protein, low fat diet, multiple vitamins, lipotropic agents, crude liver extract and other agents are available for the treatment of liver complications.

Testosterone in daily doses of 25 mg. at first and later half that quantity should be used if the patient is not in nitrogen balance and is wasting.⁴ This hormone has a marked anabolic effect, restores nitrogen, and stops the excessive loss of creatine in severely

*Read before the Meeting of the Tennessee State Medical Association, April 21, 1954, Nashville, Tenn.

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thyrotoxic patients. Estrogens have been recommended in this disease, but opinion is divided as to their efficacy.

One should be on the alert for development of diabetes mellitus by the hyperthyroid patient. Almost 10 per cent of these cases show disturbances of carbohydrate metabolism, and 2 to 4 per cent of all cases of hyperthyroidism are made permanently diabetic by their disease.⁵ If diabetes mellitus was already present, it is almost invariably made much worse by hyperthyroidism.

Antithyroid Drugs

The antithyroid compounds which have found important places in clinical medicine consist of iodine, the thiouracils, and certain imidazoles.⁶ The use of radioactive iodine in this disease has been discussed by another member of this panel. Hence it is excluded from this presentation.

Plummer⁷ was the first to popularize the use of iodine in the treatment of hyperthyroidism. The drug is commonly given as Lugol's solution, 5 or more drops three times daily by mouth. It depresses thyroid function by interfering with enzymatic reactions in the thyroid gland by which iodine is used to form thyroid hormone, by suppressing the formation of thyrotropin in the pituitary gland, and by inactivating preformed thyrotropin inside and outside the thyroid gland. If these effects persisted as long as the drug was employed treatment would be easy. Unfortunately the effect of iodine wears off in about three weeks, as a rule, and the hypertrophy and hyperplasia of the gland with increased vascularity, which had been controlled by the drug, return producing toxicity which no amount of iodine will then check until the medicine has been withdrawn for a few weeks. Then it may again be exhibited, often but not always, with results as successful as on its first trial. This loss of effect of iodine is the greatest weakness of the drug, its tendency to normalize the architecture of the gland its greatest strength. Occasionally iodism necessitates withdrawal of the medicament. The efficacy of iodine may vary considerably in the same patient or in different patients. Thus, it is not highly predictable, yet it remains one of the bed-rocks of ther-

apy, particularly in preparing the patient for surgery.

The introduction of thiouracil by Astwood⁸ in 1943 gave the profession a potent weapon against hyperthyroidism. Here was a drug which regularly and predictably controlled the disease by depressing the oxidative enzyme systems necessary for binding inorganic iodide to protein to form thyroid hormone. Moreover, this suppressive action could be achieved in a short period of time, regulated quite well by increasing or decreasing the dose, and maintained for practically an indefinite period of time. Unfortunately this and related compounds, such as methylthiouracil and propylthiouracil, do not normalize the thyroid gland. That is, they do not decrease in the toxic gland the hypertrophy, hyperplasia and increased vascularity with decreased colloid storage because they do not neutralize thyrotropin, the pituitary hormone responsible for these effects.

Their failure to suppress the action of thyrotropin may also precipitate a vicious type of exophthalmos referred to as thyrotropic exophthalmos, caused by thyrotropin. Yet, by controlling hyperthyroidism, the thiouracils may cure a less malignant type of exophthalmos caused by thyroxine and known as thyrotoxic exophthalmos. Clearly then, the clinician must pay particular attention to the eyes in employing the thiouracils and recognize that he is taking a calculated risk in using them if malignant exophthalmos of the thyrotropic type is present. In such an event he may have to employ thyroid extract to suppress the formation of thyrotropin by the pituitary gland, X-ray therapy to slow down this pituitary function, or surgical procedures such as the Naffziger orbital decompression.

The imidazoles have essentially the same mode of action as already described for the thiouracils and thus the same weaknesses, but they are less toxic, which no doubt explains their increasing popularity.

Toxic Effects of the Antithyroid Drugs

Various toxic effects of the thiouracils and the imidazoles have been described, the chief ones being agranulocytosis and an urticarial and febrile reaction. The develop-

ment of either makes withdrawal of the drug mandatory, but another of the antithyroid preparations can then be tried for it is not common for a patient to be sensitive to more than one of them. These drugs sometimes cause the goiter to enlarge even while they are decreasing its toxicity, but usually not unless excessive amounts have been given. For this reason they should not be used if the goiter is substernal as rapid enlargement of the gland may compress vital structures in the superior mediastinum.

When one is using the antithyroid compounds the patient should be closely observed for evidence of toxicity to the drug. Since the initial symptoms of toxic reactions are often vague, the patient should be instructed to stop the drug if he notices any new symptoms and to report to the physician. Especially should be report if he develops fever or a sore throat since agranulocytosis often begins in this manner. It is a very wise idea to see the patient weekly at first until he is under control, and then monthly. At these visits the basal metabolism should be checked and complete blood counts performed. In this way one can detect a drop in the total white count or in the granulocytes and withdraw the drug before it does further damage. Although I have never seen these drugs injure the kidneys, I always check the urine also.

Frawley and Koepf⁹ have described neurological toxic effects of these derivatives. The drugs can also cause diarrhea or edema.

Cardiac Failure

In cardiac failure due to thyrotoxicosis dangerous problems are posed. Surgery is strictly contraindicated. The use of radioiodine may cause a fatal exacerbation of the hyperthyroidism and, even if it does not, the patient may die of heart failure before the radioiodine, which requires weeks to control toxicity, comes to the rescue. Roentgen radiation to the thyroid gland may also cause a flare-up of toxicity and is far too slow in its effects. In this situation the antithyroid drugs offer the only safe method of treatment as they begin to suppress thyroid activity at once, do not cause exacerbations of hyperthyroidism, and are

reliable and certain in action. They should not be depended on alone. The usual management of cardiac failure must be instituted, comprising digitalization, oxygen when needed, mercurial and other diuretics, low sodium intake, fluid and electrolyte balance, and proper sedation.

Types of Cases to Be Treated Medically

McGavack⁶ feels that the following types of cases deserve treatment with antithyroid drugs:

1. All patients upon whom thyroid surgery is to be performed as antithyroid drugs offer an almost certain method of producing euthyroidism. Iodine often fails to reduce the metabolism entirely to normal, but it is combined with antithyroid drugs just prior to surgery to reverse the pathological changes in the gland.
2. Children and adolescents with the first attack of Graves' disease. In this group radical therapy may have unfortunate effects on the gonads or other glands.
3. Aged parents with hyperthyroidism complicated by severe diseases of the heart or kidneys, as they are poor risks for other forms of therapy. Antithyroid drugs usually control these patients safely and surely.
4. Thyrotoxic subjects with cardiac failure, for reasons already discussed.
5. Pregnant women with hyperthyroidism. After the second month of pregnancy the fetal thyroid takes up radioiodine.¹⁰ Hence it is contraindicated in pregnancy for fear of injuring the fetus. Later in pregnancy surgery is contraindicated. Therefore, antithyroid drugs should win by default in pregnancy. However, one should not try to reduce the pregnant mother's basal metabolism below plus 25 per cent with these drugs for fear of injuring the fetus, and one should also remember that after delivery the child should not nurse the mother if she is still on the thiouracil type of drugs as they are transmitted easily in mother's milk to the infant in potent quantities.

6. Patients with postoperative recurrences of hyperthyroidism. The scar tissue from the first operation makes the second difficult, and the patient is often reluctant to go through further surgery. In many of

these cases exophthalmos is marked and may be increased by radioiodine. For that matter it may also be increased by antithyroid drugs, as they do not suppress thyrotropin, the pituitary hormone responsible for the most severe form of exophthalmos. Small doses of iodine, which does suppress this hormone, may have to be added to the antithyroid regimen in these circumstances.

7. Patients with borderline hyperthyroidism. In this type of case, where after detailed studies the diagnosis is still in doubt, a therapeutic test with the antithyroid drugs may settle the question.

Personally, I feel that these drugs have no place except preoperatively in the management of nodular goiters.

Methods of Using Antithyroid Drugs

1. *Iodine.* Iodine is usually given by mouth as Lugol's solution. The customary dose is 5 to 10 drops three times daily. This may be more than is needed but there is no reliable method of testing the exact amount required. At least, this quantity has stood the test of time and almost never produces iodism. If one is preparing the patient for surgery with an antithyroid drug, that drug is continued up to the day of surgery and Lugol's solution in the amounts described is started when the basal metabolic rate is plus 20 per cent or below and is continued until the patient is euthyroid, the gland is firm and packed with colloid, and the operation is performed.

If the case is being handled non-surgically by an antithyroid drug such as Tapazole or propylthiouracil, iodine in the form of Lugol's solution 1 to 2 drops a day should be added to the regimen when the toxicity is well controlled and continued daily for three months after the antithyroid drug is discontinued. The purpose of this is to try to return the gland to normal by decreasing vascularity, hyperplasia, and hypertrophy and by increasing colloid storage.

Huge doses of Lugol's solution are given sometimes in the thyroid storm, 200 drops a day or more. If the patient is vomiting, sodium iodide can be given intravenously, 1.0 Gm. dissolved in 1,000 cc. 5 per cent glucose in distilled water.

2. *Imidazoles.* Of all the antithyroid

drugs Tapazole appears to be the most rapid in action, only slightly toxic, and relatively sure in effect.¹¹⁻¹⁴ The technic of using it will be presented as typical of that used in employing any imidazole instead of discussing each member of this group individually. It is put up in 5 mg. tablet size. Two such tablets (10 mg.) after each meal is the usual beginning dosage but sometimes twice this amount will be required to control toxicity. The controlling dose is then continued two to four weeks, and if the patient is steadily improving the amount of the drug can be reduced 50 per cent. After this it is ordinarily safe to decrease the daily dose by 5 mg. each month. If one encounters a rise in toxicity that amount of the drug which last controlled the patient is ordered, and the patient is kept on it a full month before attempting any reduction. When month by month the dose has been cut to the point where the patient is taking only 5 mg. per day for one month, he should take during the next month only 2.5 mg. daily, and the subsequent month the same dose every other day. Then the drug is stopped.

When toxicity is controlled the patient should also take one drop of Lugol's solution daily until three months after Tapazole is discontinued.

3. *Thiouracils.* Of the thiouracils I prefer the propyl derivative because of reliability of action and low toxicity, even though it does take a few days longer than some of its competitors to exert its effect. It is given by mouth in the form of 25 mg. tablets. To begin with the patient takes four, and rarely five, such tablets after each meal and at bedtime until he is obviously getting under control, and then the dose is decreased by one to two tablets a dose per month, carefully observing for an exacerbation of the clinical state and reinstituting larger dosage if such occurs. If all goes well the patient is finally down to one 25 mg. tablet daily for a month, and then one such tablet every other day for the final month of therapy before stopping the drug completely. Lugol's solution is administered as discussed with Tapazole.

Management of Severe Exophthalmos

In severely exophthalmic patients surgery

is best avoided because of the great tendency for the ocular condition to exacerbate after thyroidectomy. The probable reason for this is that the thyroid hormone tends to suppress the formation of thyrotropic hormone by the pituitary gland; when the blood level of thyroid hormone is suddenly decreased by surgery thyrotropin production is unchecked, and it pours into the blood in greater amounts, thus increasing the exophthalmos. Radioactive iodine decreases thyroid function more slowly and thus its use in these circumstances does not carry so great a risk of increasing the exophthalmos. However, there is still a definite risk. The thiouracils and the imidazoles likewise may aggravate exophthalmos by virtue of their failure to suppress thyrotropin.

In this dilemma the first drug to use is thyroid extract in as heavy doses as the patient can tolerate in an effort to suppress pituitary thyrotropin production and hence ameliorate the oculopathy. At the same time one must use Lugol's solution to control hyperthyroidism and to inactivate thyrotropin. Estrogens should be tried as they, too, tend to suppress thyrotropin formation. If these measures do not give sufficient results, X-ray therapy to the pituitary to decrease hormone production is justified.

Needless to add, the services of a good ophthalmologist are in order as corneal ulceration, severe visual damage, or even blindness can result from exophthalmos. Bland ointments to the eye and pressure dressings over the closed lids protect the corneas and retro-orbital edema may be partially decreased by diuretics and salt restriction. Finally, surgical decompression of the orbit may be required.

The Thyroid Storm

There are few medical emergencies more dramatic than the thyroid storm but fortunately it is now seen only rarely, thanks to the vastly improved medical technics of preparing thyrotoxic patients for surgery. In essence, the storm is a tremendous exacerbation of hyperthyroidism, and it requires heroic treatment. It occurs chiefly in three types of patients:

1. Postoperatively in cases wherein hy-

perthyroidism was not controlled adequately prior to surgical trauma.

2. In unrecognized cases of hyperthyroidism it may erupt following any type of surgery, or accident, severe illness, or delivery.

3. Old known but poorly treated and neglected patients are fit candidates for the storm.

Since the patient is usually vomiting and often unconscious iodide may have to be given intravenously. This is best done by putting 1.0 Gm. of sodium iodide in 1,000 cc. 5 per cent glucose in distilled water, to be given intravenously. Half of this amount of sodium iodide should also be administered as a retention enema. More should be given later depending on the response of the patient. Since Tapazole is the fastest acting of the antithyroid drugs it should also be employed, the initial dose being 60 mg. followed by 20 mg. every four to six hours until recovery from the storm is obvious; then the dose can be decreased slowly.

Large doses of aqueous cortical extract may prevent collapse of the patient. There is some evidence to show that cortisone and ACTH have an antithyroid effect referred to as "corticogenic hypothyroidism."¹⁶ Apparently steroid adrenal hormones inhibit pituitary thyrotropin production. Cortisone can also help produce exophthalmos,¹⁷ but this possibility should not interdict its use in such a life threatening situation as the thyroid storm. The dramatic antipyretic effect of cortisone should be a great help since hyperthermia is almost routinely present in the storm and is in itself a great danger to the patient. Alcohol rubs, electric fans blowing across the patient, and antipyretics are all used in a desperate attempt to beat down the rising fever which is burning up the patient, making him delirious, aggravating his already extreme tachycardia, dehydrating him, and occasionally causing convulsions.

Severe restlessness requires heavy sedation, perhaps intravenous sodium amytal or Demerol, to get the patient under control. The huge oxygen requirements of such a case can be met only in an oxygen tent. Large amounts of fluid containing glucose and appropriate electrolytes are needed to combat dehydration and acidosis.

Summary

1. The medical management of hyperthyroidism has much to commend it, but no claim is made that it should be used to the exclusion of surgery or radioactive iodine.

2. Potent antithyroid drugs of low toxicity such as Tapazole and propylthiouracil are highly reliable in controlling thyrotoxicosis. The technics of using them and of combining them with iodine are discussed in detail and their toxic effects, infrequent as they are, are described.

3. Adequate physical and mental rest are important in this disease, and a highly nutritious diet heavily reinforced by vitamins and calcium is necessary for good results.

4. Lugol's solution is the only drug capable of returning the pathology of the thyrotoxic gland to normal, because it is the only one which suppresses and neutralizes thyrotropin, the pituitary hormone responsible for the production of these changes. Alone, it is usually inadequate and should be combined with thiouracil derivatives or one of the imidazoles.

5. Seven types of thyrotoxic patients likely to benefit most by medical management are discussed.

6. The handling of cardiac failure in this disease, exophthalmos, and the thyroid storm require special therapy covered in some measure in this presentation. Liver damage, acute or chronic, is common in hyperthyroidism and should be searched for routinely. The same remarks apply to diabetes mellitus which occurs temporarily or permanently in almost one out of ten thyrotoxic cases.

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THE SURGICAL MANAGEMENT OF DISEASES OF THE THYROID GLAND*

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The past decade has witnessed many advances in the practice of medicine and surgery. One of the most notable among these has been that made in the safety and scope of surgery of the thyroid. It has always been the primary concern of the thyroid surgeon to control hyperthyroidism by one means or another. Early in the century this was accomplished by staged operations consisting of ligation of the poles, lobectomy in stages and in destruction of the gland piecemeal by repeated injections of boiling water into the goiter or by means of X-ray therapy. The first milestone in the present successful treatment of hyperthyroidism was reached in 1923 when Plummer¹ advocated the use of Lugol's solution in the preoperative preparation of the patient. The second milestone was reached about 20 years later when in 1943 Astwood² discovered the value of thiouracil in the treatment of hyperthyroidism. The third milestone was the report of Hertz, Roberts and Salter³ in 1942 which led to the use of radioactive iodine in the study and control of diseases of the thyroid. While these measures are all strictly medical they have served the surgeon equally well in the diagnosis and treatment of thyroid disease. They have reduced the mortality, the postoperative crises and have even eliminated the necessity for surgery altogether in some cases.

Graves' Disease

There is considerable controversy as to the place radioactive iodine should play in the treatment of Graves' disease. McCullagh⁴ sets down a dozen good reasons why he thinks I¹³¹ is preferable to surgery and most surgeons should recognize his reasons as quite valid ones. However, with our present experience, and particularly our lack of accessible facilities, the use of radioactive iodine should be limited to the following indications:

(1) Postoperative recurrence of hyperthyroidism.

(2) Old age.

(3) Poor cardiovascular status or presence of other severe concurrent disease.

(4) Refusal of surgery after recurrence following treatment with propylthiouracil. In some cases intolerance to antithyroid drugs may call for the use of I¹³¹. Radioactive iodine should certainly *not* be used in children or in the last two trimesters of pregnancy.

The best treatment of Graves' disease is preparation with adequate dosage of propylthiouracil followed by Lugol's solution and surgery. I say "adequate dosage" because the dose frequently used is not adequate. I would like to emphasize here the importance of close liaison between the internist and the surgeon, with the surgeon seeing the patient from the beginning of treatment and at frequent intervals during the period of preparation.

Surgery of the thyroid carries a very low (about 0.5 per cent) mortality in the hands of competent surgeons. The complications, however, leave something to be desired. This is due to the vulnerability of the recurrent laryngeal nerves and parathyroid glands. The reported incidence of injury to the recurrent nerve ranges from 0.37 per cent⁵ to 7.15 per cent.⁷ Crile attributes his exceedingly low incidence of damage to the recurrent nerve to the use of the anatomic dissection technic wherein the nerves are routinely visualized. I prefer this technic for this and many other reasons.

Tetany of a transitory nature is to be expected in about 1 to 2 per cent of the cases but it is permanent in only 0.18 per cent.⁶ The specimen should be carefully inspected for the presence of parathyroid glands and if any are found they must be grafted into the sternocleidomastoid muscle. Transient tetany can be controlled very well by vitamin D and large doses of calcium lactate by mouth.

Recurrent hyperthyroidism can be expected in about 5 per cent of the cases when ade-

*Read before the Meeting of the Tennessee State Medical Association, April 21, 1954, Nashville, Tenn.

quate resection has been done. Hypothyroidism increases as the recurrence rate drops so that a ratio of about 5 per cent recurrent hyperthyroidism and 20 per cent hypothyroidism is reached.

A pre- and postoperative examination of the vocal cord should be done. A chest X-ray film should be obtained routinely to rule out a substantial goiter. Endotracheal anesthesia is preferred by most operators but local anesthesia with cervical block is very satisfactory. As stated above, the anatomic dissection technic as performed by Crile⁴ is followed. The strap muscles are seldom, if ever, divided. The recurrent nerves are visualized and the inferior thyroid artery is ligated in continuity. Cotton ligatures are used throughout. Positive pressure by the anesthesiast is used prior to closure in order to demonstrate bleeding from collapsed veins. Drains are not routinely used. Care is taken to resect the pyramidal lobe since I have seen it left behind only to be the seat of recurrent hyperthyroidism or the formation of an unsightly adenoma.

Another complication of Graves' disease which is not peculiar to surgery is exophthalmos. With all forms of treatment the incidence and course of the exophthalmos is about the same. The exophthalmos progresses for a few months then recession occurs. Some cases show regression from the beginning of therapy while in rare instances this distressing complication proceeds unchecked until blindness ensues or drastic measures such as the orbital decompression advocated by Naffziger are carried out. Recently Dobyns¹⁷ isolated a factor from the pituitary which he believes is responsible for the production of exophthalmos. There is indication also that ablation of the pituitary or the stalk of the hypophysis is more effective than decompression operations in the control of progressive exophthalmos.

Nodular Goiter

The problem of the nodular goiter should be considered under two heads because the problems are entirely different.

First, let us consider the *solitary adenoma*. The discovery of a solitary adenoma in a patient under forty is more significant

than in an older patient. This is especially true in men. Hazard⁹ found that 12 per cent of 429 consecutive thyroids removed at autopsy at the Cleveland City Hospital from all age groups contained a solitary adenoma. The importance of the solitary adenoma lies in the fact that a high percentage of them are malignant when first seen. The incidence of malignancy in solitary nodules is reported as about 24 per cent.^{10,11} A recent survey by Cattell and Colcock of the Lahey Clinic revealed an astounding figure of 33.3 per cent malignancy in 156 solitary adenomata.¹⁶

There should be no argument that a clinically diagnosed solitary adenoma should be removed. The surgeon who undertakes the operation should be prepared to do a complete cancer operation at the time of the thyroidectomy. The treatment of choice in solitary adenoma is to do a complete removal of the involved lobe, the isthmus, and adjacent portion of the opposite lobe. The lymph nodes in the area should be palpated and if grossly involved as proven by frozen section a radical neck dissection should be done. If they do not appear involved then the operation is terminated. Later, if nodes appear, it is the time to do a radical neck dissection.

Non-toxic multinodular goiters should be removed as follows:

- (1) When they are producing symptoms of compression,
- (2) When they are substernal,
- (3) When they are cosmetically undesirable,
- (4) When there is a dominant nodule suspected of malignancy.

Certain authors¹² advocate thyroidectomy in all multinodular goiters on the grounds that first, 50 per cent of them will become toxic within ten years and second, their removal prevents formation of carcinoma. Most surgeons do not subscribe to these as being valid assumptions.

Substernal goiters are most easily and safely removed through the neck where their blood supply originates. If necessary, the center of the substernal adenoma can be morcellated with the finger and evacuated. Then it is an easy matter to deliver the

lower pole by applying traction on the capsule.

Multinodular toxic goiters are somewhat more dangerous to deal with than true Graves' disease because they are more difficult to control medically. However, these goiters can be controlled prior to surgery by the use of the thioureas, Lugol's solution or radioactive iodine if the physician is not too impatient to wait. Sometimes it takes six months or more to bring a large toxic gland under control but it can be done. We have used as much as 900 mg. of propylthiouracil per day before successful control was obtained. McCullagh² obtained a remission in 77 per cent of multinodular toxic goiters treated by radioactive iodine. However, the use of I¹³¹ is advocated in these goiters only to prepare the patient for surgery or in cases where surgery is contraindicated. There is no excuse for surgery to be advised or carried out until the hyperthyroidism is under control. It is in these cases also that the closest cooperation between the internist and the surgeon is of paramount importance. In multinodular toxic goiter the treatment of choice is surgery. This serves to remove the pathological gland and to control the hyperthyroidism very effectively with a very low recurrence rate.

Carcinoma of the Thyroid

Carcinoma is one of the most confusing aspects of thyroid disease. Each pathologist has his own complicated classification of carcinoma with all types of variants so that when one finishes reading a few such classifications he is thoroughly confused. It is essential for the surgeon and the pathologist to know and use the same classification so the surgeon can discuss the problem at hand intelligently. The simplest classification from the clinician's point of view is that of Crile in which he divides all carcinomas into papillary and non-papillary carcinoma.⁶ About 63 per cent of all carcinomas of the thyroid are papillary and are usually found in younger individuals, the average being 34 years. Any nodule in the thyroid of a child should be strongly suspected of malignancy.

It is most fortunate that such a large percentage of carcinomas are of the papillary

type because the prognosis is good. Most patients live for many years even if untreated. What is the treatment of choice in papillary carcinoma of the thyroid?

One school of surgeons¹² advocates lobectomy and the usual type of radical neck dissection. Following surgery they give intensive X-ray therapy routinely. The other school¹¹ advocates the careful removal of the involved lobe and isthmus with palpation of the lymph nodes for possible metastases. If such are found the entire group of nodes with the areolar tissue about them is removed. The sternocleidomastoid muscle may be divided low and reflected but not removed. The reason for this liberal attitude is the fact that these tumors are slow growing and are prone to metastasize no further than to the adjacent lymph nodes. This idea of temporizing with a malignancy is unacceptable to many surgeons, but in these cases the results appear to be as good with the limited dissection as with the conventional radical neck dissection. (The opponents of radical neck dissection contend that the operation does *not* remove all the nodes usually involved and does remove nodes practically never involved, and in so doing creates considerable disability.) Recently I had a 63 year old man who had had a papillary carcinoma removed in 1920. Since that time he had had several crops of lymph nodes removed. We removed the remaining nodes thirty-three years after his first operation. There was no evidence of distant metastases.

Cattell¹³ found 88 per cent of patients on whom he did a radical neck dissection had involved lymph nodes. Cattell and Colcock¹⁶ recently reported that 50 per cent of all patients subjected to radical neck dissection proved to have positive nodes. Other writers⁷ gave a figure of only 25 per cent. However, Crile¹⁴ found lymph node involvement in 20 out of 24 cases.

Personally, I have concluded that papillary tumors should be treated by hemithyroidectomy, and if involved nodes are found a radical neck dissection should be done, care being taken to remove the upper mediastinal nodes. X-ray therapy is indicated in papillary carcinoma. If distant metastases are found a total thyroidectomy fol-

lowed by therapy with I^{131} should be considered.

The results in treatment of the more anaplastic lesions is rather discouraging. Most of them will die in spite of all treatment within a year or so. These tumors are usually locally invasive and cannot be eradicated completely. The bulk of the tumor can be excised, a tracheotomy done, and massive doses of high voltage X-ray given.

Thyroiditis

Surgery is usually not indicated in thyroiditis¹⁵ but is often done before the diagnosis is suspected. Subacute thyroiditis can be diagnosed if its possibility is kept in mind. The symptoms are usually clear-cut. It responds well to X-ray and ACTH. Struma lymphomatosa, on the other hand, may produce no symptoms except a feeling of compression in the region of the thyroid. This lesion is most often diagnosed at surgery when the grayish, brittle, finely lobulated slightly adherent gland is exposed. The isthmus only should be removed when this mistake is made and the patient treated postoperatively as she should have been from the start, with either X-ray therapy (2,000 r) or with desiccated thyroid in large doses. The diagnosis is easily made preoperatively by the use of the Silverman needle biopsy. The only type of thyroiditis requiring surgery is Riedels' struma. This is very rare type of thyroiditis. Suffice it to say that only an enucleation of the central mass and decompression of the trachea is all that should be attempted.

Summary

A brief summary of the surgical management of diseases of the thyroid has been presented. The importance of the close cooperation between the internist, the pathologist, the radiologist and the surgeon has been emphasized.

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The problem of rheumatoid arthritis remains one of the most difficult in the area of treatment in the medical field. The hoped for panacea in cortisone turned out a failure. It has taken its place merely as another aid in the armamentarium for the management of the disease. The final word in therapy must await the solution of the physiologic or biochemical disturbances which lead to the anatomic and functional abnormalities of the disease.

TREATMENT OF CHRONIC RHEUMATOID ARTHRITIS*

WILLIAM C. CHANEY, M.D., Memphis, Tenn.

Rheumatoid arthritis, also referred to as atrophic arthritis and arthritis deformans, challenges the thoughts of the most profound medical expert. Why should a young man or woman who has enjoyed good health up to a certain age, then develop this form of arthritis? This disturbed physiology, of which painful joints is one of its complications, may result from years of hard work and worry or from some chronic illness which depleted the stored up reserves in the human body. These people look sick. They are usually anemic, have lost weight and oftentimes have fever. The course of the disease resembles that of many fever-producing illnesses in that remissions often occur and indeed spontaneous cures may take place.

Why is it that this form of arthritis becomes less severe in women during the months of pregnancy and in both men and women during an attack of jaundice?

Experiments on rats have shown that the pituitary-growth hormone may be of direct etiologic importance in chronic arthritides.

Is there any relationship between rheumatoid arthritis and the so-called collagen diseases such as disseminated lupus, periarteritis nodosa, scleroderma, and dermatomyositis?

In reviewing the literature on this disease we find that the physician has made little progress in solving the problem, especially if we recall that evidence of arthritis goes back even to the time of the dinosaur.

This type of arthritis with its crippling effect has been a tremendous problem for the Medical Departments of the Armed

Forces. Large government hospitals have been built near the various hot springs throughout the United States for the treatment of this disease: a recognition of the fact that heat, freely used, has a curative value.

There are certain areas in the tropical parts of the world where this type of arthritis is almost unknown. Transportation by air, being as efficient as it now is, we would like to see several hundred of these crippled soldiers hospitalized on one of these tropical islands for a number of months. The fact that rheumatoid arthritis does not occur in these areas does not mean necessarily that cases of this disease would improve there.

Rest is certainly another valuable form of treatment, as important in arthritis as it is in tuberculosis. Real physiologic rest with freedom from worry and want competes with heat for the number one place in therapy.

Salicylates should be discussed along with rest. In our opinion, salicylates, in the form of aspirin, are as important in arthritis as they are in rheumatic fever. Relative freedom from pain insures more complete rest and this is so important especially during the hours of sleep. Most people with arthritis can tolerate six or eight aspirin tablets each day over a period of months and even years.

Nearly all sufferers from rheumatoid arthritis look tired and worn, are underweight, and anemic. Attention should be given, therefore, to adequate doses of iron, a very reliable vitamin B complex, and cod liver oil. The diet should be rich in protein and high in calories. The training table for the average football team would be a fine place for arthritics; they cannot eat so much

*Read before the Tennessee State Medical Association, April 20, 1954, Nashville, Tenn.

but the type of food would be ideal. Whether a lot of starchy foods do harm, we cannot say, but if enough meat is consumed there will be little room for desserts. The anemia will soon disappear, weight and strength will improve and the joints will be less swollen and tender.

Bowel habits. Most of these arthritics have been using laxatives. If the colon is normal to X-ray and there are no amebas, a regular bowel habit can always be established. These patients must be educated to eat a diet with some residue, to drink an abundance of water, and to go to the toilet after breakfast. Laxatives do harm by irritating the bowel and by rushing food through the gastro-intestinal tract before much of it can be absorbed.

More and more evidence is being accumulated to show that *infection* plays no part or at least a very minor part in this disease. Certainly a great error of the past has been removal of many of these patients' teeth. By doing this, the diet has to be restricted to what the patient is able to chew.

The value of *heat* to the arthritic joints has already been referred to. This form of physiotherapy must be carried out every day, month after month. Heat lamps, electric pads, and hot baths are all valuable forms of treatment that can be carried out at home. Each day, too, *active and passive movement* of the affected joints must be carried out, being careful not to traumatize the joints too much. Teaching the patient the importance of correct body posture should be included under physiotherapy.

In our attempt to correct every evidence of disturbed physiology, a number of these people with rheumatoid arthritis have a mild *hypothyroidism*. Small doses of desiccated thyroid will help this group a very great deal.

When the results of treatment have been poor, though every effort has been made over a period of months to bring about improvement, we should then turn to the scientific use of *cortisone*. Cortisone should be used in large doses for a short while and then the dose should be reduced sharply. The physician should warn the patient of the danger of stopping the use of cortisone too suddenly. The amount of cortisone nec-

essary to maintain a period of remission in this disease is much greater than the amount required in Addison's disease. Rheumatoid arthritis, therefore, is not caused by adrenal insufficiency, apparently. We might be dealing with a situation similar to some cases of diabetes in which large doses of insulin are necessary, much more insulin than is required after the pancreas has been removed.

The probability of cortisone eventually solving this mystery of rheumatoid arthritis and bringing about a real cure is great indeed but we certainly need a lot more experience with its use. The physician who uses cortisone should review the medical literature very carefully. The patient should be seen at frequent intervals while under treatment. Hench has made this statement recently that, if conservative treatment of the active rheumatoid process does not control this disease, cortisone should then be added to the treatment. Those who have had experience with cortisone are not afraid of its side effects.

To quote from Dr. Hench, in referring to cortisone, hydrocortisone and corticotropin, he said: "*These hormones still belong as much, if not more, to physiologists and clinical investigators than to rheumatologists or general practitioners. As now used, they are more satisfactory as remedies for acute self-limiting diseases than for chronic diseases. But they are very useful, reasonably safe, remedies even now in many cases of rheumatoid arthritis, and are often the treatment or supplement of choice. Above all, they are the most useful research tools ever developed for the study of rheumatic and certain other diseases.*"

Gold has been used quite extensively in the treatment of this form of arthritis. I have not had any experience with it. Certainly expert knowledge of the complications that may develop, when gold is being used, is very important.

Over the years, we have gotten good results in treating rheumatoid arthritis. This has been due to conservatism in treatment and the belief that many of the disturbed physiological processes in this disease are reversible.

Mr. Fairless, President of U. S. Steel, said

in a recent speech, delivered in Wilmington, Del.: "I came here primarily to view with some alarm the rapid disappearance of one of America's most precious natural resources—our native supply of plain old-fashioned common sense."

The physician who has an abundance of this old-fashioned common sense will get better results in the treatment of arthritis than the doctor who relies entirely on treatment that is spectacular.

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Discussion

HENRY B. GOTTEN, M.D. (Memphis): In his presentation Dr. Chaney has emphasized the im-

portance of long accepted methods of treatment and certain fundamental physiological principles. He has also told us that there is no sure or quick cure for rheumatoid arthritis.

I would like to emphasize the necessity for a careful survey of patients complaining of painful joints, for it is too easy to lump such complaints in the category of rheumatism, and to do the patient a grave injustice.

Consider that a patient with joint pains may have (1) rheumatoid arthritis, (2) periarteritis nodosum, (3) rheumatic fever, (4) lupus erythematosus, (5) malignancy of the bone, (6) gout, (7) functional, (8) endocrine, (9) sensitizing, (10) hemophilic, or (11) neuropathic arthritis, (12) bursitis, (13) syphilis, (14) tuberculosis, (15) myositis, (16) fibromyositis, (17) dermatomyositis, or (18) structural and developmental defects.

Symptoms originating from such multiple causes as listed above should not be carelessly treated with aspirin, heat, or salicylates as an easy therapeutic escape. Certainly ACTH and Cortisone should not be given indiscriminately as a shot-gun remedy or upon false hopes of a quick cure.

The patients with arthritic symptoms deserve screening as carefully as patients with cough, fever, or pain in the chest. Treatment should then, and only then, be prescribed in the light of such intelligent evaluation.

Congenital Heart Disease—An Illustrated Diagnostic Approach. Henry S. Kaplan, M.D., and Saul J. Robinson, M.D., Stanford University School of Medicine, McGraw-Hill Book Co., Inc., New York, 1954. 126 pages.

This atlas presents a concise, well-illustrated description of the more common congenital cardiac defects. Numerous drawings that emphasize the relative size and position of the cardiac chambers and great vessels are used throughout the book. These drawings are superimposed upon the actual x-ray films and correlated with electrocardiograms to give a very practical picture of each defect.

The busy practitioner will find this handbook very useful because of the clarity of discussion and completeness of the many x-ray illustrations. (Abstracted for the Middle Tennessee Heart Association by G. W. Hudson, M.D., Nashville.)

The author outlines the basic principles of treatment in a group of common injuries.

HAND INJURIES: SOME EARLY AND LATE PROBLEMS*

J. MALCOME ASTE, M.D., Memphis, Tenn.

One does not like to emphasize the importance of one's own special interest in surgery, but I am sure that this group readily recognizes the great frequency and importance of hand injuries in the field of surgery. It has been shown that somewhere between a third and a half (as stated by Mason) of industrial accidents occur to the hand, and though figures are not available I am certain that the hand stands quite high on the list of non-industrial injuries.

The primary goal of all surgery for trauma to the hand is functional restoration. The hand is such a beautifully and accurately constructed organ that it is readily wrecked by trauma and the results of trauma, and we must exercise every effort to restore it as quickly as possible to its uses,—a motor and sensory end-organ as it were. Cosmetic restoration is of secondary consideration.

The greatest enemy to successful surgery of the hand is scar tissue, and despite our clinical and experimental efforts fibrosis and scar tissue formation remains very much of an enigma. We know that young children heal more kindly than the aged group, and the thin asthenic type who smokes one or two packs of cigarettes daily will heal with more fibrosis than the calm individual who has a nice subcutaneous fat pad over the fingers and hand.

The earliest problem with which the physician is confronted is to recognize his responsibility to exercise the judgment and care that will restore the damaged hand to a functioning unit as soon as possible. In order to diagnose and treat an injured hand one should have an intimate knowledge of the anatomy, mechanics, and physiology of the normal hand. This may sound like a large order for an individual who has had no recent contact with anatomy and physi-

ology, but a few simple tests will serve to make an accurate evaluation of the hand injury and they should be in the mind and on the finger tips of anyone who sees and treats these wounds.

General Principles

The general principles of the actual immediate care of open wounds of the hand have been so often outlined that I hesitate to do so again, but they are of such importance that reiteration is justified.

1. History of injury and accurate examination of the hand.
2. Decision whether or not primary suture of the deeper structures is to be carried out.
3. Cleansing of the skin and irrigation of the wound.
4. Tourniquet control, a bloodless field.
5. Gentleness in handling of tissues.
6. Small instruments and small suture material.
7. Adequate time for the operation.

Time does not allow me to dilate on these various steps, but one point deserves particular emphasis. Many of us, general surgeons, as well as general practitioners, fail to realize that one does not have the same license in regard to trauma and asepsis in dealing with the hand as one does in other types of surgery. In abdominal surgery, for example, one has the kindly peritoneum which stands ready to make amends for slight infection, and where fibrosis and scar tissue is not followed with the same disability as one sees in the hand.

Compound Injuries

In compound injuries of the hand there must be minimal sacrifice of tissues. The early problem is to convert open wounds to closed ones as soon as possible, even if this means just the application of a temporary split-thickness skin graft, referred to by Mason and Allen¹ as a physiological dressing. In late cases, where the area of cica-

*Read before the Tennessee Chapter, American College of Surgeons, April 20, 1954, Nashville, Tenn.

trix is extensive and involves deeper structures in the hand, or where deeper surgery is contemplated, such as work on bones, nerves, or tendons, it is important to excise all scar tissue and replace the cover with a pedicle flap. Whenever possible this flap may be taken from the adjacent tissue around the cicatrix or wound. This is particularly important when working on the palmar surface of the fingers. The nerve supply eventually comes into grafted skin so that light touch and pin prick can be felt, though sometimes not with normal acuity. In hands there are special touch corpuscles for a fine degree of stereognosis; therefore one cannot expect the skin which is transferred from the abdomen or the chest to supply the degree of stereognosis as normally present in the hand.

Tendon Repair

We have three methods of tendon repair available to us and all may be used with satisfactory results when the proper conditions apply. These methods are:—(1) primary tenorrhaphy, (2) secondary tenorrhaphy, and (3) tendon graft. According to Flynn,³ the so-called golden period for primary repair of flexor tendons has been lengthened considerably since the advent of antibiotics, but this tenet has not been universally adopted.

In cleanly incised wounds involving the flexor tendons primary repair may be carried out. Many times this may be done within the flexor sheath if the wound is under six hours old and if one uses extremely careful atraumatic technic and only the profundus tendon is sutured.

If the wound when first seen is over eight hours old, if the patient is not in good general condition or is intoxicated, if the wound is what Rank of Australia calls "untidy," or it has been previously tampered with, it can be thoroughly irrigated and the skin and subcutaneous tissues closed, being particularly careful not to leave any catgut in the wound except some fine 4-0 for the ligation of active bleeders. If the wound heals without infection, at the end of three or four weeks secondary repair of the tendons may be carried out using the same principles as in primary tenorrhaphy. When in

doubt about the wound one should refrain from extensive primary repairs.

Experiences in recent years have convinced me that tendon grafting is a satisfactory method of repair in the hand. If the wound is over five or six weeks old, or if there has been a previous unsuccessful attempt to repair the flexor tendons, the grafting procedure can be carried out with success. This is true if one of the tendons of the lateral extensors of the toes or the palmaris longus is removed through a curvilinear incision and not stripped from its bed. There must be good joint mobility and there should not be excessive scar tissue overlying the tendons. In dissecting out the tendon for graft, one must preserve the areolar tissue surrounding the tendon to provide a gliding surface. We know that these tendons do survive and grow with the individual and this is particularly amazing in view of the circulation of the normal tendon as pointed out by Meyer, Gonzalez, and most recently by Brockis¹ of England.

Extensor tendon injuries are usually dismissed by most authors as being of very minor importance. It is true that if they are handled correctly results are much more satisfactory than injuries of the flexor tendons. Posch⁵ in a recent article stated that if extensor tendons are sutured with two or three 6-0 cotton sutures, uniformly good results are obtained. I believe the divided ends should be approximated with the same care that is used in flexor tendons, and that the wrist and involved fingers should be kept in extension for a minimum of three or four weeks, lest the strong over-pull of the flexor action damage the freshly united tendon ends.

Nerve Repair

The two main functions of the hand are motion and sensation and these are of equal importance. Without sensation anyone, manual worker, artist, or housewife, is seriously crippled, particularly if the median nerve is lost. This nerve constitutes the principle tactile part of the hand including the pulps of the thumb and first two fingers. It is most important then to test a patient at the time of examination for loss of sensation. If the median nerve has been cut at

the wrist, loss of the small motor branch to the opponens group will disable the thumb in opposing the fingers of the hand.

Until 1925 there was practically nothing in the literature on suture of nerves below the wrist. All other factors being equal these nerves should be repaired at the time of injury, certainly they should be repaired if the wound meets the requirements for primary tendon repair. Exceedingly good results follow the suture of nerves in the hand in most cases. One reason is that the nerves are no longer mixed but are either purely motor or purely sensory. The other fact is that the regenerative power of the nervous system increases as we reach the periphery. The damaged ends of the nerve should be trimmed with a sharp blade and approximated as closely as possible using fine silk, either 6-0 or 7-0 on an atraumatic needle. The poor results that have been reported probably resulted from faulty technique of initial repair, or failure to identify nerves and suture of nerve to tendon.

In late cases of severed nerves there has been a rather pessimistic attitude on the part of some neurosurgeons in regard to the

prospects for regeneration. I do not feel that this opinion is justified, for we have been most agreeably surprised with the results obtained in a number of cases of late repair of nerves, some with an interval of three years.

Finally, the patient must be encouraged to use the hand just as soon as the tissues will stand it. The patient should practice his own physical therapy with warm soaks and should use the hand during all of the waking hours of the day. Restoration of function can be expedited in many instances by dynamic splinting, as pointed out by Bunnell.²

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The Effects of General Anesthesia and Hexamethonium on the Blood-Sugar in Non-Diabetic and Diabetic Surgical Patients. J. A. Griffiths. *Quart. J. Med.* 22:405, 1953.

Using a technic of controlled hypotension consisting of the intravenous injection of hexamethonium after the induction of anesthesia, it was noted that severe hypoglycemia occurred in two diabetic surgical patients. Three patients with controlled diabetes showed a stable blood sugar with standard anesthesia. Induced hypotension caused considerable potentiation of insulin action in one other diabetic patient, and the hexamethonium masked many of the signs of severe hypoglycemia.

In thirty-five non-diabetic patients, anesthesia and induced hypotension produced variable and clinically unimportant changes in the blood sugar.

The author concludes that controlled hypotension by hexamethonium is strongly contraindicated in diabetic patients. (Abstracted for the Tennessee Diabetic Association by R. F. Ackerman, M.D., Memphis.)

CASE REPORT

Optic Atrophy Following Acute Suppurative Sinusitis*

M. Byron Weisbaum, M. D.,† Memphis, Tenn.

The patient, a 12 year old colored boy, was brought to the Eye Clinic of the Memphis Eye, Ear, Nose, and Throat Hospital by his father on October 7, 1953, because of severe swelling of the left eye of less than 30 hours duration with visual impairment which the father believed was more than likely due to the swelling. Further questioning disclosed that ten days prior to the onset of swelling the child had complained of a foreign body sensation which lasted a day or two and then subsided.

Examination revealed an apparently well developed and healthy child with a severely involved left eye showing edema of the upper lid and a marked proptosis.

The pain brought on by attempts to open the lid was marked and due to the apprehension of the child nothing but a very cursory eye examination was performed. Palpation of the globe through the lid apparently was not painful, and it was determined that the eye could be displaced into the orbit, which gave us some assurance that at least we were not confronted with an intra-orbital tumor.

Because of the above findings it was felt that we were obviously dealing with a sinusitis and the child was immediately transferred to the Ear, Nose, and Throat Department for further evaluation.

Physical findings in the Ear, Nose, and Throat Department were: a purulent nasal discharge on the left side, tenderness to palpation over the region of the frontal and ethmoid sinuses and an oral temperature of 101°.

Laboratory studies on October 8 were: RBC. 4,550,000, Hgb. 86%, WBC. 12,900, differential, 70% filamented polys, 30% lymphocytes. Urinalysis, including microscopic examination, was within normal limits. X-ray films revealed marked clouding of the frontal sinus, anterior ethmoid cells and maxillary sinus on the left. The right paranasal sinuses showed no involvement.

Course. On the morning following admission, an external ethmoidectomy was performed and a moderate amount of purulent material was obtained. An intranasal antrostomy was also performed and a wick inserted.

The hospital course was relatively uneventful, the patient had a mild septic type fever for the first 6 postoperative days up to 101° and up to

100° daily from the seventh to the fourteenth postoperative days.

The culture obtained at the time of surgery was reported as *Cornebacterium acnes*, a Gram positive rod with the morphology of a diphtheroid. Sensitivity tests showed it to be sensitive to Aureomycin, Chloromycetin, Bacitracin, Erythromycin, and Magmamycin.

Because of the sensitivity of the organism, to the antibiotics large doses of Erythromycin were administered beginning 24 hours postoperatively and continued during the 18 days of hospitalization.

Forty-eight hours postoperatively the patient was seen in consultation by an ophthalmologist and it was the opinion of the consultant that the eye was unaffected at that time. The hospital record does not indicate that any more eye studies were ever carried out during his hospital stay but a note at the time of discharge was written by the consulting otolaryngologist indicating that there was complete loss of vision in the left eye.

The patient was next seen in the Eye Clinic on November 2, 1953 (6 days after discharge) and examination revealed visual acuity of 20/20-J.I., O.D., light perception-O.S. External examination revealed incomplete resolution of the swelling of the left upper lid and a mild residual proptosis. The pupil reacted to light and on fundoscopic examination a secondary optic atrophy and macular edema were noted. Measurements with an Hertel exophthalmometer were O.D., 17 mm.; O.S., 21 mm. His condition was followed in the clinic at weekly intervals for several weeks with no change in any of the findings.

Four months postoperatively he was again in the clinic at which time there was no light perception by the left eye. A residual swelling of the upper lid was still present and the measurements with the exophthalmometer were O.D., 17 mm. and O.S., 20 mm. The disc was completely atrophic. The patient was discharged and a diagnosis of secondary optic atrophy following optic neuritis was made. Etiology was recorded as acute suppurative anterior ethmoiditis and maxillary sinusitis, left side.

On February 19, 1954, the child was once again brought to the clinic by his father with an identical swelling in his right eye but less painful and of lesser severity than that seen previously in the left eye.

The history obtained from the father disclosed that the child had had a sensation of a foreign body in the right eye the previous afternoon, and on arising the swelling in the right eye was noticed.

Examination. Visual acuity was O.D., 20/20 J.I.; O.S., no light perception. Visual field in the right eye revealed enlargement of the blind spot by about 2 to 3 degrees concentrically. Fundoscopic examination showed the disc to be hydropic, the macula and vessels were normal. No measurable papilledema was present at this time.

Because of the catastrophic outcome of the pre-

*Read before the meeting of the Tennessee State Academy of Ophthalmology and Otolaryngology, April 19, 1954, Nashville, Tenn.

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vious episode the patient was hospitalized immediately. Sinus X-ray films were obtained and massive doses of antibiotics were instituted. The X-ray examination revealed clouding of the right frontal and ethmoid cells. The left paranasal sinuses at this time were clear but the supra-orbital ridge on the left showed a marked reaction which had the appearance of an osteomyelitis.

No anemia was present. White cell count was 12,500, with a differential of polys. 64%, lymphs. 34%, and eos, 2 per cent.

The following morning consultation with an otolaryngologist was obtained and an immediate external ethmoidectomy on the right was deemed essential. No pus, however, was obtained at the time of surgery. Hospital course was uneventful and the patient was discharged after 11 days with little or no remaining swelling. The visual acuity was 20/20-J1; the visual field in the right eye had returned to normal.

Discussion

Duke-Elder in his discussion on the role of sinuses as an etiologic factor in optic neuritis opens with a statement that "a very large literature abounds with confusion and contradictions on the vexed question of the existence or the prevalence of a rhinogenous optic neuritis."

Keeping this statement ever in mind a brief but rather thorough resume of the literature will be attempted.

Onodi and Loeb, stimulated by anatomical studies, contended that the majority of cases of optic and retrobulbar neuritis were secondary to infection of the sinuses. By their dissections they showed that the optic nerve was separated from the sphenoid and ethmoids in an almost infinite number of variations, varying from their separation by a dense bony wall to one of paper thickness. Thus they postulated that this, no doubt, was the factor responsible for some individuals getting into trouble and others not. They also found in some anatomical specimens that the nerve traversed the sinuses unprotected by any bony shield whatsoever. In all cases they were able to demonstrate the existence of an intimate interconnection with blood vessels and lymphatics. This theory had many notable adherents such as Herzog, Meller, Wilmer, and Gifford.

On the other hand, other authorities insisted that any influence nasal inflammation might have was rare and incidental. Beck attributes one case of optic neuritis out of

280 cases to nasal inflammation; Scheerer, 3 out of 200 cases; Hipple, 1 in 225 cases; Benedict, 1 in 225 cases; and Cushing went so far as to claim it to be nonexistent as a cause of optic neuritis.

Several other theories as to the relationship of infection have likewise had their proponents and in some instances have been proved by anatomical demonstration. These theories are:

(1) A direct spread of the infective process from the sinuses to the nerve. This occurs more rapidly when the anatomical relationship between the two is intimate, but is capable of occurring also by erosion of the bone. (Hoeve, 1922; Pickworth, 1928; ten Doesschate, 1928; Worms, 1936.)

(2) Pressure from a distended sphenoid sinus may affect the nerve by exciting infiltration and edema sufficient to strangle it at the foramen. (Crane, 1927; Litchworth, 1932.)

(3) Indirect transference by way of the venous and lymphatic channels to the orbital periosteum and then to the dural sheath of the nerve. (Gradle and Meyers, 1929.)

(4) Thrombosis of the emissary vein between the sinuses and the orbit. (ten Doesschate, 1928.)

(5) A localized allergic reaction involving the tissues of both the sinuses and orbit. (Stark, 1921.)

There are three cardinal points to be reckoned with in any discussion of this nature. First, that in sinus disease generally, optic nerve symptoms are a rarity. Second, it is rare for cases of optic neuritis to be associated with serious sinus disease. Third, that most optic neuritis recovers spontaneously, making it nearly impossible to evaluate the "good results" which follow operative intervention.

It must also be remembered that the advocates of non-surgical management claim their results by decongestion produced through local application of ephedrine has been as good. (Herenschwad, 1925; Herzog, 1928; White, 1928; Mylius, 1928.)

Conclusion

Because of the present status of our meager knowledge with respect to the exact relationship of the sinuses to optic neuritis

no dogmatic statement based on scientific evidence can be made. We should, however, continue to be suspicious of the sinuses in every case of optic neuritis and investigate them thoroughly.

Because of the equivocal aspect, sinus surgery should not be performed except in progressive cases in the presence of obvious sinus disease and in the absence of other etiological factors.

Because of the lack of investigation of so

moot a question as this, individual postulates and observations must continue.

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The Treatment of Bacterial Pneumonia with Erythromycin: A Controlled Clinical Study. Gibson, Jr., C. D., Nusban, H., and Anderson, D. N., *Ann. Int. Med.* 41:112, 1954.

In 1952 when erythromycin was first described in vitro studies indicated that it was potent against the pneumococcus. Then reports appeared showing that the antibiotic was effective in pneumococcal pneumonia. The authors report a study comparing the effect of erythromycin in pneumonia with that of penicillin.

Since patients entered the hospital, frequently with the story of having been given an antibiotic, or because they were too ill to await more thorough study, other criteria had to be accepted. Therefore patients were accepted on the following criteria:—(1) an acute febrile illness accompanied by malaise, cough and sputum; (2) a maximum temperature of at least 101° F., and leucotytosis of 12,500; (3) X-ray findings consistent with pneumococcal pneumonia; (4) the patient not moribund; (5) no antibiotic for at least 24 hours before admission.

With these criteria patients were placed in one of the study groups by random selection. The patients in the penicillin group received 300,000 units of procaine penicillin intramuscularly every 12 hours until the temperature was normal; additional doses of the same size were given once each day for another 48 hours. Those in the group treated with erythromycin were given 25 mg. of the antibiotic per kilo of body weight orally until the temperature had been normal for two days.

In the study, 21 patients were given penicillin and 24 erythromycin. No deaths occurred in either series. Two in each group did not respond satisfactorily to the initial treatment and so were not considered in the treatment.

The results indicate that an average of 57 hours elapsed in the penicillin group before the temperature became stabilized below 100° F. This was 42 hours for the erythromycin group. The clearing of X-ray lesions was about the same.

The authors conclude that in cases of ordinary severity erythromycin matches the results of penicillin. It seems to disturb the intestinal flora little and does not cause hypersensitive reactions.

CLINICOPATHOLOGIC CONFERENCE

Knoxville General Hospital, Knoxville, Tenn.

Rheumatic Heart Disease; Thrombosis of Abdominal Aorta

DR. RALPH MONGER: We have a very interesting case to report today. At this time I shall ask Dr. Ira Pierce to give the history of the case.

DR. IRA PIERCE: The patient was a 36 year old white female, admitted to the Knoxville General Hospital March 3, 1954, because of dyspnea and orthopnea.

Her illness dated to her Junior High School days (1934) when she was forced to quit strenuous exercise due to breathlessness. She was under the care of a private physician until March, 1951, when she was referred to the Knoxville General Hospital. At that admission she complained of shortness of breath and a choking sensation.

The *past history* revealed nothing suggestive of acute rheumatic fever.

Physical examination then revealed a weight of 120 lb., B.P. of 120/90 and a regular pulse of 72 per min. The ears, eyes, nose and throat revealed no abnormalities; there was no jugular distention. A few moist rales were heard over both lung bases. The PMI was in the 6th interspace in the left anterior axillary line. There were heard a grade 4 systolic apical and a soft presystolic apical murmur. The liver extended 3-4 finger breadths below the costal margin and was slightly tender. No pedal or popliteal arterial pulsations were present, although weak femoral pulsation was noted. The *laboratory findings* at that time were essentially normal.

X-ray examination revealed marked cardiomegaly and a moderate increase in the hilar and peripheral vascular shadows. The aortic arch was not increased in width. The pulmonary conus was slightly prominent. There was no notching of the ribs. Cardiac fluoroscopy disclosed a huge heart with generalized enlargement.

The *diagnosis* at that time was *rheumatic heart disease* with possible coexistent *coarctation of the aorta*.

Clinical Course. The patient responded to a cardiac regimen and was discharged to be followed in the Heart Clinic.

Second admission was on August 5, 1951, for cardiac exploration. However, when anesthesia was being induced, she developed auricular fibrillation, and it was decided to defer surgery. She was discharged from the hospital on October, 1951, and was followed as an out-patient at intervals in the Heart Clinic, doing fairly well although remaining in chronic congestive heart failure.

She was *readmitted* to the hospital on March 3, 1954. At this admission she was dyspneic at rest, and displayed marked pitting edema, distention of the neck veins, tender hepatomegaly, and bilaterally medium moist basal rales. The other physical findings were similar to those of 1951, except that the congestive heart failure was more pronounced. The pedal arterial pulsations were still absent, and there was no detectable blood pressure in the lower extremities.

DR. MONGER: Dr. Gaw, will you discuss the laboratory findings, clinical course, and treatment?

DR. J. C. GAW: This interesting patient was admitted to the hospital with a tentative diagnosis of rheumatic heart disease with mitral insufficiency and marked cardiac decompensation. Both left and right ventricular failure was present as shown by marked pitting edema of the lower extremities, ascites, hepatosplenomegaly, and pulmonary congestion. The diagnosis of coarctation of the aorta arose because of the absence of blood pressure in the lower extremities and absence of arterial pulsations in the dorsalis pedis and posterior tibial vessels.

The initial treatment consisted of a continuation of digitalis, bed rest, mercurial diuretics, ammonium chloride and a low sodium diet. Other treatment instituted soon after admission included aminophyllin, sedation, oxygen, abdominal paracentesis and general supportive measures.

The initial *laboratory studies* were as follows: Hgb., 11.5 Cm.; RBC, 4,350,000; and a WBC of 9,900 with a slight neutrophilia. The blood test for syphilis was negative. The total serum proteins were 8.6 Gm., with 5.5 Gm. of albumen and 3.1 Gm. of globulin. The urinalysis revealed a 4+ albuminuria and a specific gravity ranging from 1.010 to 1.018.

The initial chest *X-ray* showed marked cardiac enlargement, a generalized dilatation with a pattern suggesting predominant right-sided enlargement. However, there was only slight increase in the size of the heart over that of 1951. The changes of pulmonary congestion were noted in both bases. The *X-ray* revealed no notching of ribs. An admission EKG revealed auricular fibrillation, right ventricular strain and digitalis effect.

By the 9th hospital day it was apparent that the patient was steadily losing ground. She began to have pain in the lumbar region and in the epigastrium which required analgesics for relief. Nausea and vomiting were present. Glucose was given slowly intravenously, because of the pro-

tracted nausea and vomiting in order to assure an adequate fluid intake. The dosage of digitalis was increased using Gitaligin inasmuch as there was no clinical indication that the nausea and vomiting were due to digitalis. A serum sodium was 143 mEq./L. The PCV was 54% and the NPN was 38 mg. per cent. On the 12th hospital day dyspnea became worse and a productive cough was present. The patient had lost only 3 lb. of weight. Auricular fibrillation at the rate of 120 persisted. On the 14th hospital day it was noted that her ventricular rate was remaining around 120 and on the assumption that she might not be fully digitalized the dosage of Gitaligin was increased. However, no change occurred in the cardiac rate.

On the 16th hospital day, the patient continued to have some epigastric and back pain requiring Demerol for relief. (The epigastric pain was believed to be due to chronic passive congestion of the liver.) Nausea continued, but at this time there was very little vomiting due probably to poor food intake. The patient was irrational and restless. The NPN had risen to 75 mg. per cent. The patient was unable to void and catheterization became necessary. On the 19th hospital day the blood pressure began to drop and bloody sputum was noted. The patient was more restless and still irrational. The NPN was 118 mg.% while the serum chloride and CO_2 combining power were both normal. The patient reported chest pain. Anticoagulant therapy was begun on the assumption that pulmonary infarction had developed. The icteric index had gone from 24 to 64 units. The patient required continuous oxygen. A temperature of 102.5° was found on the last hospital day. She remained irrational, restless, orthopneic until her death on the 21st hospital day.

DR. J. E. ACKER, JR.: This girl was seen in December, 1951, and followed intermittently until the time of her death. I saw her initially and felt she had mitral stenosis and insufficiency without being able to determine definitely the degree of each. Lutembacher's syndrome was considered also. After studying her in the clinic we felt she did have rheumatic mitral stenosis and insufficiency. Subsequently in the hospital femoral pulses were not felt and the blood pressure was unobtainable in the lower extremities. Therefore the question of coarctation of the aorta arose though no notching of the ribs was found, which occurs in almost 100 per cent of patients with this disease. In spite of this it was agreed that the patient had aortic coarctation and that she should be operated on with the hope we might be able to improve her situation. After she was anesthetized she seemed such

a bad risk it was considered inadvisable to go on with the operation. We subsequently abandoned the impression of coarctation and agreed that she had rheumatic heart disease alone. Several examiners heard a diastolic murmur but probably more often did not. In spite of this I feel her clinical course was that of rheumatic mitral insufficiency and stenosis. We were unable to determine before death why her femoral pulses were so markedly diminished. Several other pertinent points should be discussed with regard to her final admission. First, the inability to slow her ventricular rate below 100 brought up the question of inadequate digitalization, but after increasing the drug to toxicity we knew we were not dealing with insufficient digitalis. Therefore, in looking for other causes, the obvious one seemed that of a myocardium which was played out, and in retrospect I think this was true. The final insult was the development of a pulmonary embolus three days before her death.

DR. RICHARD C. SEXTON: This was an exceedingly interesting patient whom we saw on the ward on a few occasions. We should attempt, as in all post-mortem studies, to determine why the patient was ill and why the patient died, inasmuch as the initial illness may not have been the cause of death. Other questions to be answered are: (1) What is the exact etiologic and anatomic diagnosis? (2) Why did this patient develop refractory congestive heart failure? (3) Why did she develop azotemia and why did she become icteric? and, (4) What abolished the blood pressure in the lower extremities?

I am in accord with Dr. Acker's ideas regarding the anatomic diagnosis. The physical, electrocardiographic and roentgenologic findings are consistent with a diagnosis of rheumatic heart disease despite the absence of a history of acute rheumatic fever. The auscultatory findings and the peripheral vascular findings were, however, quite confusing.

I saw the EKG before I listened to her heart; it revealed right axis deviation with a characteristic right ventricular strain pattern. Upon examination I heard a harsh apical systolic murmur but no diastolic

murmurs. Members of the house staff said a diagnosis of coarctation of the aorta had been made because of the absence of blood pressure in the lower extremities and the harsh apical systolic murmur. Dr. Acker had, however, heard an apical diastolic murmur on a few occasions and had, I believe, correctly assumed that the patient had mitral stenosis and insufficiency. The absence of detectable blood pressure in the legs remain to be explained. The possibility of the coexistence of rheumatic mitral disease plus coarctation of the aorta was considered. The possibility of Leriche syndrome (thrombosis of the terminal aorta) was also considered. In retrospect, the absence of protracted severe headaches and notching of the rib margins would favor the latter possibility.

Why did this patient develop refractory congestive heart failure? We should look for precipitating and perpetrating causes in congestive heart failure. The recognition and removal of these causes often means the difference between recovery and death.

There are probably several reasons why this patient was refractory to conventional forms of therapy. Unfortunately, we do not know her electrolyte changes and so can only speculate. I believe Dr. Acker's assumption that the congestive failure was due to failure of the pump is accurate. This mechanism could have been augmented by an electrolyte disturbance, by the development of an active rheumatic myocarditis or, as it probably was, by pulmonary infarction. Active rheumatic myocarditis should always be considered in any patient with rheumatic heart disease who develops congestive failure or a sudden mechanismlal disturbance. Other precipitants in congestive failure are myocardial infarction, pulmonary embolism, pneumonia, acute infectious illnesses or any stress sufficiently severe to liquidate the cardiac reserve. Pulmonary infarction almost certainly hastened the demise of this patient, although it apparently did not initiate her congestive failure.

What are the serum electrolyte patterns which characterize and complicate congestive failure and which, if any, are applicable to this patient? The electrolyte and water disturbances in a cardiac patient are due to

a number of factors. Knowledge of these and their relationship to the pathogenesis of congestive failure is helpful in treatment. Early there is altered renal glomerular and tubular function. Decreasing renal blood flow decreases glomerular filtration causing a glomerulo-tubular imbalance. With this there is a normal or increased tubular capacity to reabsorb sodium, resulting in an increased total body sodium and an increase in total body water with a tendency to metabolic alkalosis. If there were an increase in posterior pituitary secretion, water retention would occur with hypo-osmolarity; increased secretion of adrenal cortical hormones would lead to sodium retention and metabolic alkalosis.

Respiratory stimuli may alter the electrolyte pattern. Anoxic stimuli produce hyperventilation leading to respiratory alkalosis. Conversely, diminished gas exchange due to pulmonary disease will produce CO_2 retention and respiratory acidosis.

Some patients on a low sodium diet will develop hypochloremic alkalosis when mercurial diuretics are given, due to selective diuresis of the chloride ion and may be accompanied by a diuresis of potassium. Then replacement therapy should include both chloride and potassium. Ammonium chloride may produce hyperchloremic acidosis with the clinical picture of stupor, hyperpnea, azotemia, low plasma CO_2 content and even coma. This is more apt to occur in patients with renal insufficiency. Treatment consists of withdrawing ammonium chloride and, if the intoxication is severe, the administration of alkaline sodium salts.

These changes in fluid and electrolyte patterns may be accompanied by significant changes in the intracellular electrolyte structure which must be kept in mind when their correction is being attempted.

The low sodium syndrome sometimes complicates the treatment of congestive failure when the total body sodium is depleted by excessive sodium diuresis without concomitant water diuresis. It usually results from protracted use of mercurial diuretics with a low sodium diet. The administration of hypertonic sodium usually produces dramatic improvement, and if hypo-

potassemia is also present this ion must be added to the repair solution.

Diarrheal states with predominant loss of base in patients on a salt depletion regimen may produce symptomatic hyponatremia and even hypopotassemia. Also excessive vomiting with loss of chloride and potassium in such patients may produce hypochloremic, hypopotassemic alkalosis.

Thus the electrolyte and fluid disturbances which occur in congestive failure, because of these several factors, must be kept in mind in a rational therapeutic approach. Likewise we will attempt to reconstruct the metabolic situation in this patient. We cannot definitely assess all of these mechanisms because we do not have sufficient blood electrolyte studies.

The failure of the pump results in a diminished renal blood flow. The renal blood flow instead of being 25 per cent of the cardiac output is, let us say, 15 per cent. With the development of a refractory tachycardia the cardiac output is further diminished due to the encroachment on the diastolic filling time and thus further reduces the renal blood flow and glomerular filtration rate. Since tubular capacity to reabsorb sodium is undisturbed, or even increased, retention of sodium and water occurs. Sodium is gradually sequestered to the interstitial fluid compartment with relative hyperosmolarity and expansion of this compartment. If this persists, sodium may migrate into the cells and water then does the same to maintain intracellular isotonicity. This may result in increase in total body water and sodium. As sodium enters the cells potassium may gradually move into the interstitial fluid causing an intracellular potassium deficit. With this shift of fluid and change in electrolyte pattern there is a gradual contraction of the vascular fluid compartment. This sequence of change is consistent with the findings by Ross that the blood volume, contrary to previous assumptions, is actually decreased in congestive heart failure. It is interesting that a congestive failure syndrome (not due to heart failure) has been observed in severe eclampsia and toxemia and been successfully treated with hydration.

This patient had an hematocrit of 54 when

her serum sodium was 143 milliequivalents, indicating that isotonicity of the vascular compartment was maintained as its volume was reduced. It is probable that this patient's hematocrit would normally be about 35 vol. per cent; this means her hematocrit had been elevated by at least 15 to 20 vol. per cent. She had oliguria probably due to marked reduction in glomerular filtration attendant upon volume and flow changes. Thus, we see dehydrational oliguria or hypotonic dehydration in a patient who is obviously waterlogged.

This approach may help in a treatment program though not in this patient. She was seen the day before she died when she was irrational, oliguric, hyperpneic, and had azotemia. Any attempt to help this patient through measures to improve renal function would have required expansion of the vascular fluid compartment. This, in a patient with marked congestive failure, entails considerable risk, but it was believed that failure to expand it in this particular clinical picture was even more risky. We accordingly elected to give the patient 200 cc. of 5 per cent saline with a view to gradually expanding the vascular compartment. We reasoned this would increase glomerular filtration and raise the sodium concentration of the tubular urine to a level above the reabsorption threshold and thus induce a sodium and water diuresis. Perhaps this objective could have been achieved better by the use of blood plasma expanders or a larger volume of a less concentrated solution. This approach was selected for it would permit the introduction of a small volume of fluid and thus minimize the dangers which a larger relatively sudden increase in volume would entail in a patient with marked congestive heart failure and renal failure. In any case we felt there was nothing to lose and, as is apparent by the organs before us today, we didn't gain anything. Probably the failure of the pump was so great that she was unable to take advantage of this mechanism.

It is assumed that the icterus in this patient was due to chronic passive congestion of the liver or possibly to the absorption of blood products from the pulmonary infarct or both.

Final Clinical Diagnosis

1. Rheumatic heart disease with:
 - a. Mitral stenosis (predominant valvular lesion)
 - b. Mitral insufficiency
 - c. Calcification of mitral valve and of atria
 - d. Auricular fibrillation
 - e. Refractory congestive heart failure due to aforementioned mechanisms
 - f. Rule out active rheumatic myocarditis.
2. Pulmonary infarction secondary to auricular thrombi.
3. Absence of blood pressure in lower extremities due to:
 - a. Thrombosis of the terminal aorta and/or
 - b. Coarctation of the aorta.

DR. C. L. WALTON: I did not examine this patient fluoroscopically, but have inspected the films made on the first admission to those of a few days before death. There is a constant contour of the heart with definite enlargement in the transverse diameter and a rounding of the cardiac silhouette prominent in the left upper border, which indicates enlargement in the pulmonary segment. There is also some apparent diminution in the size of the aortic knob. There is some congestion of the pulmonary vessels, but not marked—particularly on the earlier films. On the lateral view there are flecks of calcium which lie in the region of the posterior wall of the left auricle. I cannot say conclusively there is great enlargement of the left ventricle, but there might be some enlargement not manifested on the two projections we have here. I believe we can say there is a large right ventricle with some dilatation and pulmonary congestion. The calcification in the region of the left auricle is indicative of mitral stenosis. An associated insufficiency could not be definitely established from the films.

It is unlikely that this represents a patent ductus arteriosus or septal defect in view of the calcification noted, and the size of the pulmonary vessels is not quite as large as is usually seen in these conditions. It would have been interesting to note if there had been pulsation of these vessels. On the later film we see congestive failure, show-

ing what I interpret as some interlobar fluid. Of course this might have been associated with a pulmonary infarct not clearly manifested on the films. My diagnosis is *mitral stenosis*, possibly with some insufficiency. I cannot definitely establish the size of the left ventricle from these films.

DR. WILLIAM SWANN: If it had been possible to do a mitral valve commisurotomy at the time this patient was brought to surgery three years ago, I feel she would have benefited from the procedure. The operation would have been a hazardous one in view of the visible calcification in the left auricle. In our series of operations for the mitral valve we have encountered two patients with extensive calcification in the left auricle. In such a situation it has been recommended that the superior pulmonary vein be used as an approach to the auricle, an approach which is hazardous and unsatisfactory. We have devised a plastic, operative tunnel which can be sutured to the wall of the auricle in some area which is free of calcification, and thereby gain access to the heart without breaking loose calcified plaques from the wall of the auricle. Additional precautions are necessary in these patients to prevent calcific emboli to the brain. One may compress the carotid vessels in the neck when manipulations are carried out within the auricle, or one may compress these vessels from within the thorax by means of a tape about their origin. In a recent paper Ruskin and Samuel have reviewed the literature on calcification of the auricle and have found 18 such cases associated with rheumatic valvular disease and diagnosed during life. They added two additional cases.

DR. MONGER: There is considerable pathology in this case, so we will limit the discussion to the facts of most interest.

External examination of the body shows very marked edema of the lower extremities involving both thighs and both legs.

The heart weighs 600 Gm. The coronary arteries are apparently normal. The left auricle is enlarged; it is very difficult to open since the entire wall is calcified. A large, well organized thrombus almost completely fills the auricle. In the right auricular appendage there are several large, well formed thrombi. The mitral valve is very small and will not admit the index finger when the heart is opened; the opening measures 2

cm. There is marked thickening of the valve with calcified deposits on the upper surface. The left ventricle is markedly hypertrophied, the wall measuring 3 cm. The right ventricle is more markedly hypertrophic than the left, measuring 3.5 cm. (Fig. 1.) The myocardium is pale and



FIGURE 1

of flabby consistency. There is marked dilatation of all the chambers of the heart. The aortic opening measures 5 cm.; the tricuspid, 12 cm.; and the pulmonary opening measures 9 cm. These latter valves are normal in appearance.

The right lung weighs 500 Gm.; the left, 325 Gm. In the right lung is a sharply demarcated, dark red area involving almost the entire lower lobe. Below the bifurcation of the pulmonary arteries is a large, grayish red embolus which almost completely occludes the lumen of this vessel. The lung distal to this is characteristic of an acute hemorrhagic infarct.

The liver weighs 1250 Gm. The external surface is roughened. It cuts with increased resistance to the knife and strands of connective tissue are visible. This has a characteristic picture of what we might define as cardiac cirrhosis.

The spleen, gallbladder, pancreas, adrenals, kidneys, bladder, internal genitalia, stomach and intestines show no finding other than those characteristic of chronic passive congestion.

The aorta is very interesting. It shows a diminution in elasticity with a few pale yellow and opaque plaques present. There is some calcification in the abdominal portion. There is a marked diminution in the circumference of the lumen for in the lower 3 cm. it measures only 1 cm. Extending from this area for a distance of 8 cm. up through the lumen of the aorta is a well organized thrombus which is firmly adherent to the intimal surface. This almost completely occludes the lumen. (Fig. 2.)

Microscopic studies reveal hypertrophy of the heart, but in none of the sections are there any areas specific for rheumatic heart disease. Other than the acute hemorrhagic infarct of the lung the other microscopic findings are characteristic of chronic passive congestion.

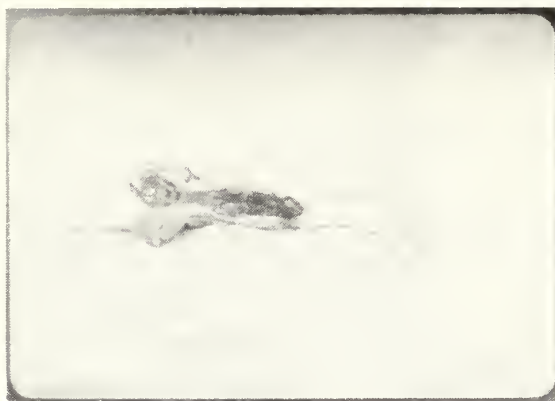


FIGURE 2

We may then briefly summarize the anatomical diagnosis as follows:

1. Hypertrophy and dilatation of heart
2. Mitral stenosis
3. Massive thrombosis of the left auricle with calcification of the wall of the auricle
4. Thrombosis in the right auricular appendage
5. Thrombosis of aorta in the abdominal portion
6. Cardiac cirrhosis of liver
7. Embolus of pulmonary artery, right lower lobe, with acute infarction of right lower lobe
8. Chronic passive congestion of spleen and kidneys
9. Marked edema of lower extremities.

DR. SEXTON: If we can exclude an old saddle embolus with subsequent organization and complete occlusion, the findings in the terminal aorta are classical of the Leriche syndrome. Since the original description (1940) several cases have been recognized, a few have been treated by surgical resection of the thrombosed segment of the aorta, and a few by thrombo-endarterectomy and bilateral lumbar sympathectomy. In a few patients in whom the process was fairly well localized the diseased thrombosed segment of the aorta has been resected and replaced with an aortic homograft.

Most instances of terminal thrombosis of the aorta are due to atherosclerosis, with deposition of a thrombus on ulcerated atheromatous plaques and propagating to the point at which complete occlusion of the

aorta occurs. There are reported instances of this syndrome following trauma to the abdomen. There are others in which it has followed peritonitis or other inflammation in the peri-aortic region; apparently it has, in a few instances, followed the giving of X-ray therapy to the abdomen. Since the thrombus did not extend above the origin of the renal arteries, and was old and organized, the oliguria was not due to occlusion of the renal arteries.

It is now easy to see how a patient with this combination of lesions could stimulate coarctation of the aorta,—a harsh apical systolic murmur, absence of detectible blood pressure in the legs and faint femoral pulsations. Only after a complete cardiovascular evaluation was the true nature of her intracardiac lesions established.

DR. PALMER: The fact that the lower extremities were asymptomatic in respect to acute vascular insufficiency would seem to indicate that the onset of the aortic lesion was insidious, favoring a thrombosis rather than an embolus.

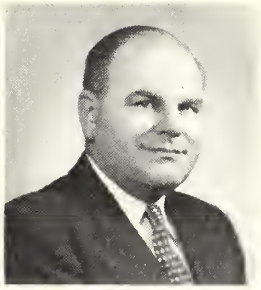
DR. SEXTON: This point is well taken. Most of these patients have symptoms of chronic vascular insufficiency, complaining of pain in the gluteal regions and claudication in both lower extremities. The possibility of a saddle embolus which partially occluded the aorta with subsequent gradual complete occlusion cannot be excluded. The inordinate amount of atherosclerosis of the aorta may or may not have a casual relationship. In any case it is probable that the occlusion was gradual, as complete occlusion by a saddle embolus is catastrophic and

will almost invariably bring the patient to the hospital with a clinical picture permitting its detection. Leriche's syndrome by definition is produced by a gradual progressive occlusion of the terminal aorta with arterial insufficiency of the caudal portion of the body. It is secondary to disease in or about the aorta. A saddle embolus by definition is not an instance of Leriche's syndrome, but cannot be excluded because of the relative frequency with which saddle emboli occur in patients with mural auricular thrombi.

DR. GAW: Relative to the lesion of the lower abdominal aorta, the lumbar and abdominal pain beginning about the ninth day in the hospital and requiring Demerol for relief raises the question of whether it was a recent lesion. This was a prominent complaint throughout the later half of the hospital course.

DR. SEXTON: I doubt that this pain was necessarily evidence of recent occlusion of the aorta. Instead, I suspect it was due to increased arterial insufficiency of the caudal portion of the body due to the central failure of the circulation. Dr. Monger states that the thrombosis is old and organized. I suspect, if we searched the history, we would find she had had some low back, gluteal and lower extremity pain for some time, probably worse during periods of cardiac decompensation. Finally, the fact that there was no detectable blood pressure in the legs during previous admissions to the hospital indicates that the lesion had been present for some time.

President's Letter



DR. THOMPSON

During recent months the legislative program of the present Washington administration has been completely unveiled. Some of it has been passed by Congress and other parts have been rejected. The evidence

is before the nation that the program is definitely left wing with many parts being outright Socialism.

The most dangerous of those introduced to date is the President's Reinsurance proposal, and I speak from having read both the original proposed law and the amended version. So, it was with great satisfaction that we witnessed the preliminary defeat of this bill in the House of Representatives. In our humble opinion this was a decided victory against further federalization of the medical care of the American public and a shining example of the organization of the glass root forces for the people and by the people.

The President did not accept the defeat very graciously, nor did he ingratiate himself with the 238 Representatives whom he charged with "not knowing the facts of life." There are many physicians who genuinely admire the President and who look to him for real leadership who were astounded at the stubborn determination to "fight for this program as long as he is in office."

There is a very definite question as to the need of government intervention in the insurance field at this time. The combined assets of the insurance companies offering health reinsurance facilities amount to approximately two billion dollars. The growth of prepayment voluntary health insurance has been extremely rapid. This plus the demonstrated ability of the insur-

ance agencies to meet the needs and demands of the people indicate that it is not necessary for the federal government to enter the insurance field. Reinsurance will not overcome the inertia of the unwilling buyer unless the government provides a subsidy for the purpose of selling insurance at a price below the cost of servicing the contract. We believe this to be objectionable. Reinsurance does not provide a means of making insurable what would otherwise be an uninsurable risk. Reinsurance does not reduce the cost of insurance unless it is subsidized.

The law does provide for the formation of another bureau with several excellent well paying positions as members of the National Advisory Council on Health Service Prepayment Plans which sets up the rules for the administration of the bill at the rate of \$50 per day and travel expenses. Above all it furnishes the wedge in the back door for the federal government to place its foot in by giving the Secretary of Health, Education and Welfare control of Voluntary Health plans. From here it is but a matter of time until further federalization becomes the next step.

You should write your Representative and thank him for voting down the Reinsurance legislation, if he is included in the 238. If he is not, write and express your disappointment over his vote. The following Representatives from Tennessee voted to Recommit Reinsurance Bill to The Committee on Interstate and Foreign Commerce: James B. Frazier, Jr., 3rd District; Joe L. Evins, 4th District; Tom Murray, 7th District; Jere Cooper, 8th District and Clifford Davis, 9th District.

A handwritten signature in dark ink, appearing to read "James B. Frazier, Jr.", with a long, sweeping horizontal line extending to the right.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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R. C. KIMBROUGH, JR., M.D.

JULY, 1954

EDITORIAL

MYOCARDIAL INFARCTION WITHOUT PAIN

When Herrick, in 1912, directed the attention of clinicians to the symptomatology of myocardial infarction, he indicated that in some cases pain was absent or of little consequence.

The subject of painless infarction has been considered in some two dozen papers. These have been reviewed and analyzed by Roseman* who then goes on to reinvestigate the problem in 220 cases reviewed at the Boston City Hospital.

In the twenty-four published series, the number of cases reviewed varied from 19, the smallest, to 572, the largest. The percentage of instances of painless infarction in these series was as low as 0.9 per cent in a series of 116 cases and as high as 61 per cent in a study of 31 cases. In recent studies the evidence has varied from 1.5 to 11 per cent. The higher rate of painless myocardial infarction in earlier papers, those of the twenties and thirties, is at least partially

explained by the inclusion of more instances of coronary sclerosis without thrombosis or infarction. The diagnostic accuracy in the later years has been greater in cases other than established at necropsy through the use of serial electrocardiograms.

Many of the so-called painless infarctions described in the literature have occurred under circumstances which make such a description invalid. Some of the thromboses which seemingly have been without pain have occurred postoperatively when the patient was still under the influence of anesthesia, in patients in diabetic or other coma, or in psychotic patients.

In any evaluation of a clinical situation the history is at times of major importance. Unquestionably, the history was inadequate in many of the so-called painless infarctions, whether due to the serious condition of the patient making history taking difficult or impossible, as in a patient in extremis, or to just a poor history.

The definition of pain is also essential in an evaluation of the pain accompanying coronary thrombosis. This involves the great variations in the threshold to pain as encountered among human beings. Though some patients have not had actual pain in the true sense, they nevertheless had discomfort or paresthesias as, a sense of pressure, a burning sensation, numbness, prickling, tingling and the like. Roseman in his series of 220 patients found that 195 or 88.6 per cent had pain. But 15 or 6.8 per cent had what he classified as discomfort. The symptoms in these cases were,—a sense of "pins and needles," "oppressive sensation," "tightness," "feeling of pressure," "choking sensation," "vague discomfort" or a "steel band" around the chest, these sensations being referred substernally in some, epigastric in others. If such symptoms are accepted in lieu of pain and as indicative of a high threshold to pain, the number of painless myocardial infarcts is reduced.

Nevertheless there do seem to be some patients having infarction who have neither pain nor an equivalent in discomfort or paresthesias. In these, Roseman indicates, the "covered symptoms" of Libman may becloud the true picture. This refers to Libman's postulate that severe pain may

*Roseman, M. D.: Painless Myocardial Infarction: A Review of the Literature and Analysis of 220 Cases. American Medical 41:1, 1954.

cover dyspnea and conversely that dyspnea may cover moderate pain. Thus Roseman found in 5 cases in his series, with an adequate history of a painless course, 4 who had severe dyspnea. This appears to be true of many of the cases described in the literature.

It seems then that painless myocardial infarction is a rarity, if one includes discomfort, short of actual pain, and paresthesias referred to the substernal or epigastric regions as manifestations of pain in one having a high threshold to pain (2.3 per cent in Roseman's series). In the patients having painless infarction, dyspnea is marked.

R. H. K.



EISENHOWER SAYS . . .

President Eisenhower has said repeatedly that the answer to socialized medicine is "locally administered programs for the indigent sick."

If that is true, then Tennessee now has the answer. The "Hospital Service for the Indigent Act" sponsored by the Tennessee State Medical Association, became an effective law on July 1, 1954. Dr. Winfield K. Sharp* has been appointed Director of the Medical Care Division of the Department of Public Health to administer the provisions of the law.

Seven other states have laws to provide medical care for the indigent but only in Tennessee have the doctors pledged themselves to accept no pay for the hospitalized indigent sick. In fact, doctors and dentists receive small fees for treating charity cases in hospitals in the other seven states.

Now that this law has become effective, the Public Service Committee of T.S.M.A. is appealing to every member of the Association to cooperate to the fullest extent in this—our project.

More than 40 counties are participating in the program in its first year of operation. It is in these counties that physicians must

be especially cooperative. It is vital that one physician, other than the Public Health Officer or paid county physician, be on the Local Screening Committee. The Public Service Committee has issued an appeal asking that local medical societies in the participating counties nominate a physician to the Local Screening Committee.

This Screening Committee is the key to success of the program. It must be both tough and humanitarian. It must "temper justice with mercy." Too much leniency will bankrupt the program; too little will deny life-saving care to those who need it.

The second big job ahead for Association members lies in the field of politics. During this fiscal year, the indigent act is financed by a mere token appropriation of \$75,000. We must obtain an adequate appropriation if the law is to do the job. Some two weeks ago (August 5) a new legislature was nominated. The Public Service Department will issue a complete list of 1955 legislators designated by counties. You are urged to personally contact all your local legislators and appeal to them to vote for an adequate appropriation for the indigent act. This amount has not been decided upon but will probably approach two million dollars annually.

The Federal Government has consistently excluded the indigent sick from any benefits under legislation for compulsory health insurance. The medical profession is pushing voluntary health insurance, and now in Tennessee we have an answer to the remainder of the problem, the care of the indigent.

If we truly believe that "charity begins at home," let's give all our support to the operation of the "Hospital Service for the Indigent Act."

R. H. K.



THE AMERICAN MEDICAL EDUCATION FOUNDATION

Under Medical News in Tennessee, the reader will find an item detailing the contributions made by the Foundation to the medical schools of Tennessee. Though editorial comment has been made on this topic before, and has been acknowledged by the

*Dr. Sharp knows Tennessee and its medical problems well. From 1924 to 1935 he was assistant to Dr. Bishop in the Department of Public Health as Director of Local Health Service, directly responsible for organization and development of the first group of county health departments throughout the state.

Executive Secretary of the Foundation, repetition only can remind the busy practitioner of important facts of medicine not directly related to everyday practice.

The financial plight of the 79 approved medical schools is serious, and this is not news. The state schools are in a better position for they can always turn to their respective legislatures for more tax support. The privately endowed schools are in a more hopeless situation since the Golden Age of medical philanthropy was ended by increasing estate, income and other taxes. Several years ago it seemed that federal funds might be needed for survival of many medical schools in the face of decreased income from endowment capital, and increased costs through inflation and the expensive equipment necessary in the teaching of modern medicine. Low academic salaries in a period of inflation have curtailed both the recruitment and the holding of faculties.

Only one-fifth of the cost of educating a physician comes from student tuition.* According to estimates, about \$10,000,000 are needed annually to meet the financial problems of the schools. Several years ago, to forestall the Federal finger being put into the schools, two groups were set up to obtain funds. The National Fund for Medical Education was formed to obtain money from industry, business and other sources with the hope it might raise most of the needed funds. The American Medical Education Foundation was set up by the A.M.A. to raise money from among the profession. A total of almost \$5,000,000 has been provided from these two sources in the past three years in unrestricted grants to medical schools.

This editorial is to call attention to the contributions by the medical profession. \$2,462,303 has been given by medicine to the schools in 1951-53 inclusive. Of this \$1,500,000 has been given by the A.M.A., \$850,087 by individual donations of doctors, \$347,812 by medical societies and \$6,871 by laymen. In 1951, less than 3,000 doctors gave money; in 1952, 7,259 contributed; and in 1953, 18,000

gave individual gifts. In Illinois, 13,211 doctors or 64 per cent of the profession contributed in 1953. Between 20 and 30 per cent of the doctors of New Hampshire, Delaware, South Dakota, Vermont and Colorado donated to the Foundation. Of Tennessee physicians, 34 or less than 2 per cent gave \$896.00.

The drive for contributions by doctors has been well organized in most states both through the Medical Societies as well as the Woman's Auxiliary. All states have a state chairman (a physician) except Nebraska and Tennessee.

As noted in the column on Medical News in Tennessee, the medical schools of Tennessee have just benefited to the extent of \$79,198. Other than the profession's percentage contributed through the half million of dollars given by the A.M.A., Tennessee gave \$896.00 in 1953. Should not we add more to the contributions of the doctors of the states which have given so liberally to medical education in Tennessee?

R. H. K.

DEATHS

Dr. Charles E. Pearce, Knoxville, died July 8, 1954. He had been in declining health for several months.

Dr. J. G. Moss, Johnson City, Aged 75, died June 18 after an illness of several days.

Dr. James B. Neil, Aged 67, of Knoxville died June 21st. He had been in declining health for several years due to a heart condition.

Dr. Anthony P. Rubino formerly of Memphis died in Naples Italy on June 8th. Dr. Rubino formerly for ten years was Medical Officer of the U. S. Public Health (Marine) Hospital in Memphis.

Dr. Jessie C. Eldridge, Chattanooga, originator of Hamilton County's Public Health Services died June 11th at St. Petersburg, Florida.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Chattanooga-Hamilton County Medical Society

A panel on "Functional Diseases" was presented at the meeting on July 1st. Dr.

*Annual Report of the American Medical Education Foundation for 1953, American Medical Association, 1954.

Joseph W. Johnson, Jr. was moderator and the other panel members participating included Dr. Merton Baker, Dr. William MacGuire and Dr. Phillip C. Sottong.

On July 22nd, the Society held its annual outing and barbecue.

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Memphis-Shelby County Medical Society

The Society met on July 6th at the Memphis Country Club where Dr. John R. Thompson, Jr., President of the Tennessee State Medical Association was the principal speaker. The program was presented as a "Tennessee Medicine Show" and in addition to Dr. Thompson, pertinent information was presented by Jack Ballentine, Executive Secretary of the TSMA and Mr. Ed Bridges, Public Services Director.

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Knoxville Academy of Medicine

Dr. Mark Fecher presented a paper on "Regional Enteritis" at the meeting held on July 20. Business taken up at the meeting included a vote whether or not to admit Negro physicians to membership in the Academy.

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Roane County Medical Society

At its meeting on July 27, Dr. Albert W. Diddle of Knoxville presented a paper on "Evaluation of Nutrition in Patients Treated with Irradiation."

NATIONAL NEWS

Expenses of Postgraduate Education Ruled Deductible for Income Tax Purposes

On April 14, 1953, the United States Court of Appeals for the Second Circuit of New York ruled that the reasonable expenses incurred by a professional man for postgraduate education are deductible for income tax purposes under Section 23 (a) (1) (A) of the Internal Revenue Code.

In the case before the court, a lawyer had attended a postgraduate course in federal taxation at New York University, and incurred expenses of \$304 for tuition, travel, board and lodging. He claimed these as a necessary business expenses in his income tax return, but the deduction was disallowed by the Commissioner of Internal Revenue.

The taxpayer's appeal to the United States Tax Court was unsuccessful, but the United States Court of Appeals reversed the ruling and directed that the deduction be allowed in full. The latter decision was not appealed to the Supreme Court by the Government attorneys, and it became final on July 14, 1953.

In view of the decision in the Coughlin case, it would seem clear that the reasonable costs of attending refresher, postgraduate medical courses would be tax deductible to practicing physicians. Of the lawyer plaintiff the court said: "... He was morally bound to keep so informed and did so in part by means of his attendance at this session of the Institute. It was a way very well adapted to fulfill his professional duty to keep sharp the tools he actually used in his going trade or business ..."

The above information has been prepared in response to numerous inquiries from physicians attending postgraduate medical and surgical courses. It is intended to inform, not to advise. For the applicability of the Coughlin decision to your particular circumstances we suggest that you consult your own attorney.

MEDICAL NEWS IN TENNESSEE

Grants to Medical Schools

The three medical schools of the State have just received grants from the National Fund of Medical Education. The grants were as follows:—University of Tennessee Medical College, \$35,943.09, Vanderbilt University School of Medicine \$21,682.00, and Meharry Medical College \$21,573.34. Grants to the Nation's medical schools are on the basis of a lump sum of \$15,000 plus \$25.00 per undergraduate medical student.

The grants have been annual beginning with 1951. The total funds allotted to date to Tennessee schools has been:—University of Tennessee College of Medicine, \$109,292.-09, Vanderbilt University School of Medicine, \$75,273.00 and Meharry Medical College, \$76,556.34. (See Editorial Comment.)

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Indigent Hospitalization Act Now in Effect

Indigent persons in need of hospitalization in counties participating in the state's program for hospital care were able to file applications for aid after July 1st. The 1953 General Assembly appropriated \$75,000 for the program, the money to be distributed

on a wealth and population basis to counties which agreed to match state funds.

Counties automatically included in the program because they already spend more than their matching share on aid to indigents include: Cannon, Cumberland, Davidson, Giles, Grundy, Hamilton, Haywood, Knox, Loudon, Madison, Monroe, Obion, Rutherford and Shelby.

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University of Tennessee College of Medicine

Dr. Harry C. Schmeisser has been retired after 33 years as Professor of Pathology. He will be appointed Professor Emeritus of Pathology and consultant to the City of Memphis Hospitals.

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Dr. Philip C. Schreier, who has been acting Chief of the Division of Obstetrics and Gynecology, has been named Professor and Chief of the Division.

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Dr. Thomas D. Moore is retiring as head of the Department of Urology, but will continue as Professor of Urology.

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Vanderbilt University School of Medicine

Dr. Vernon Knight assumed his duties as Associate Professor of Medicine, and Director of the newly established George Hunter Laboratory for Infectious Diseases. Dr. Knight comes to Vanderbilt from New York, where he was Assistant Professor of Medicine at Cornell and Director of the Laboratory for Study of Infectious Disease on the Cornell Service at Bellevue Hospital.

The George Hunter Laboratory for Infectious Diseases, just established in the School of Medicine, was made possible by the gift of a donor who wishes to remain anonymous.

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\$2,500,000.00 Set for Hospital Use in Tennessee

About \$2,500,000.00 in proposed federal funds will be allocated for Hill-Burton hospital construction projects in Tennessee.

Under the federal program, the cost of hospital projects is shared by the federal

and local governmental agencies. The federal contributions total 52% of the total cost.

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Doctors Study Cancer Plan

A plan for opening a new front in the cancer war is under study by Tennessee doctors. Members of the Cancer Committee of the Tennessee State Medical Association will discuss the plan at the next meeting of the committee.

The aim is to increase the number of early cancer diagnoses through distribution to doctors of a model cancer examination form and a concurrent public education program. Once under way, the program would work as follows: Urging patients, through leaflets, to have periodic cancer examinations, the program will recommend annually for men and women over forty to have a test that will detect a "still silent" cancer, and that the cancer, if found, can be cured.

If put into effect, the examination included in the program will consist of: (1) A chest X-ray; (2) blood study; (3) a gastric analysis; (4) study of excreta for microscopic traces of blood; (5) complete pelvic examination for women; (6) instrument examination where needed; (7) general physical examination with special attention to possible lumps or tumors and the nose and throat; (8) X-ray studies when the need is indicated; (9) removal, if necessary, of biopsy samples of any suspect material for laboratory examination.

A member of the TSMA Cancer Committee, Dr. C. S. McMurray of Nashville, has stated that he and members of the committee hope this program can be instituted as early as possible, even by early August.

PERSONAL NEWS

Dr. William M. Jackson, Dickson and McEwen, has been elected Department Surgeon for the State of Tennessee at the V.F.W. State Convention held recently in Knoxville.

Dr. Winfield K. Sharp, U. S. Public Health Service (retired), has been named director of the State Public Health Department division of indigent hospitalization services.

Dr. F. A. Payne has been elected president of the Knoxville Society of General Practice. **Dr. George G. Henson** was re-elected vice-president and **Dr. John Burkhart** re-elected secretary.

Dr. J. E. Phillips, Altamont, has been added to the Grundy County Health Department.

Dr. R. W. Laughmiller has opened an office for the treatment of diseases of children at Maryville.

Dr. J. W. Oursler, Humboldt, has been honored by the Rotary Club as the winner of its annual "vocational recognition" award.

Dr. A. M. Langa has opened an office for the practice of Surgery in the McSwain Clinic at Paris.

Dr. John E. Neumann, Paris, has been elected an officer in the Knights of Columbus.

Dr. Lamar White has opened an office for the practice of medicine in Friendship.

Dr. James W. Bonds announces the opening of a children's clinic at Dyersburg.

Dr. R. A. Burns has reopened his office in Blue Ridge and will be associated with **Dr. James M. Burdine**, former Copperhill physician.

Dr. W. Blair Mosser has been appointed chief of surgical service at Mountain Home Hospital, Johnson City.

Dr. Edward T. Brading, Johnson City, has been elected president of the Appalachian Chapter of the Tennessee Heart Association. **Dr. E. L. Caudill, Jr.**, of Elizabethton was re-elected vice-president and **Dr. H. L. Monroe** of Erwin was elected vice-president also.

Dr. J. T. Moore, Algood, and **Dr. W. A. Howard**, Cookeville, are recovering from a recent automobile accident.

Dr. J. B. Naive, Knoxville, was awarded a gold watch by the civitan club on the occasion of Dr. Naive's 25th anniversary as head of Beverly Hills Sanatorium.

Dr. Jack T. Farrar, Tullahoma, has announced as a candidate for re-election to the office of Mayor.

Dr. Joseph R. Blackshear of Athens, Alabama, will be associated with the Giles Clinic at Gallatin.

Dr. Burgin H. Wood has left Tazewell to begin a two-year course in surgery.

Dr. Merrill F. Nelson has opened an office for the practice of internal medicine and will be associated with **Dr. Philip H. Livingston** in Chattanooga.

Dr. Lee Rush, Jr., has announced his association with **Dr. John L. Armstrong** of the Armstrong Clinic at Somerville.

Dr. David H. Waterman, Knoxville, is the new Chairman of the Board of Governors of the American College of Chest Physicians.

Dr. L. Rowe Driver has associated himself with **Drs. R. E. Sullivan** and **P. L. Lyle** in the practice of ophthalmology in Nashville.

Dr. Arthur R. Anderson has announced the opening of his office in Nashville for the practice of internal medicine.

Dr. Norman M. Cassell has opened an office for the practice of pediatrics in Nashville.

Dr. Thomas B. Haltom announces the opening of his office for the practice of internal medicine in Nashville.

Dr. J. L. Farringer, Jr., has opened his office in Nashville for the practice of surgery.

Dr. Herbert J. Schulman has announced the opening of an office for the practice of internal medicine in Nashville.

Dr. James J. Callaway has opened his office in Nashville for the practice of internal medicine.

Dr. Albert Weinstein of Nashville spoke at the meeting of the Kentucky Chapter of the American Academy of General Practice on July 22. His subject was "Peptic Ulcer."

BOOK REVIEW

New and Nonofficial Remedies. Issued by the Council of Pharmacy and Chemistry of the American Medical Association. Philadelphia: J. B. Lippincott Company. 1954. Price \$2.65.

The reviewer is pleased to remind the readers annually of this great contribution we as a profession make to the betterment of the standards of medical practice. Some of the money of our annual dues to the A.M.A. provides this guide, through careful study, for the use of new drugs with safety and efficiency in our patients. In this book one finds those drugs which have been adequately tested as to their pharmacologic effect, dosage and toxicity. Your reviewer knows of no better reference book to drug therapy.

R. H. K.

ANNOUNCEMENTS

Annual Seminar Le Bonheur Children's Hospital, Memphis, Tenn., September 22 and 23, 1954

PROGRAM

Wednesday, September 22

Registration, Conference Room, Le Bonheur Children's Hospital

Welcome, Mr. Adalbert G. Dierks, Administrator, Le Bonheur Children's Hospital

Changing Aspects of Pediatric Practice, Tom Mitchell, M.D.

Acute Respiratory Tract Disturbances in Infancy and Childhood, Waldo E. Nelson, M.D., Professor of Pediatrics, Temple University, Philadelphia, Pa.

Intermission

Clinical Case Presentations, Waldo E. Nelson, M.D.
Intermission
Modern Management of Acute Purulent Meningitis, James N. Etteldorf, M.D.
Acute Infectious Mononucleosis, Gilbert J. Levy, M.D.
Luncheon
The Medical Management of Urinary Tract Infections, Thomas D. Moore, M.D.
The Treatment of Otitis Media in Infancy and Childhood, J. D. Evans, M.D.
Intermission
The Diagnosis and Treatment of Anomalies of the Genito-Urinary Tract in Children, Orvar Swenson, M.D., Surgeon-in-Chief, Boston Floating Hospital
Intermission
Clinical Case Presentations, Orvar Swenson, M.D.

Thursday, September 23

Current Use of Antibiotics in Pediatric Practice, A. H. Tuttle, M.D.
Modern Treatment of Tuberculosis in Children, Waldo E. Nelson, M.D.
Intermission
Clinical Case Presentations, Waldo E. Nelson, M.D.
Intermission
Big Hearts in Little Infants, R. N. Paul, M.D.
Pediatric Applications of Electroencephalography, Don Winfield, Ph.D.
Luncheon
The Role of Physiotherapy in Poliomyelitis, Louis Britt, M.D.
Advances in Children's Dentistry, Faustin N. Weber, D.D.S.
Intermission
Surgical Emergencies of the Newborn, Orvar Swenson, M.D.
Intermission
Clinical Case Presentations, Orvar Swenson, M.D.



Fellowships for Basic Research in Arthritis

The Arthritis and Rheumatism Foundation is offering the following research fellowships in the basic sciences related to arthritis:

1. Predoctoral fellowships ranging from \$1,500 to \$3,000 per annum, depending on the family responsibilities of the fellow, tenable for 1 year with prospect of renewal.
2. Postdoctoral fellowships ranging from \$4,000 to \$6,000 per annum, depending on family responsibilities, tenable for 1 year with prospect of renewal.

3. Senior fellowships for more experienced investigators will carry an award of \$6,000 to \$7,500 per annum and are tenable for 5 years.

The deadline for applications is October 15, 1954. Applications will be reviewed and awards made in January, 1955. Address the Medical Director, The Arthritis and Rheumatism Foundation, 23 West 45th Street, New York 36, N. Y.



The American Board of Obstetrics and Gynecology, Inc.

Applications for certification (American Board of Obstetrics and Gynecology) for the 1955 Part I Examinations are now being accepted. Candidates are urged to make such application sometime in August.

All candidates for admission to the examinations are required to submit with their application a plain typewritten list of all patients admitted to the hospitals where they practice for the year preceding their application or the year prior to their request for reopening of their application, with the diagnosis, pathological diagnosis, nature of treatment, and end result.

Application for examination or re-examination, as well as requests for resubmission of case abstracts, must be made to the Secretary prior to October 1, 1954.

Under a change of requirements for the Part I Examination, candidates must submit 20 case abstracts rather than 25 as formerly. Five of these may be from one's residency service.

Office of the Secretary—Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.



Fellowship Established

The International Academy of Proctology announces the establishment of a Teaching and Research Fellowship in proctology under the direction of Dr. Marcus D. Kogel, Dean of the newly formed Albert Einstein College of Medicine, New York City. The Academy has voted a \$1,000 Annual Grant for each of three years to assist in the development of research and educational projects in proctology at the University.

The Academy offers a Teaching Seminar, open to all physicians without fee, each year. Research Fellowships in proctology are sponsored by the Academy, and three such Fellowships were voted at the time of the last Annual Meeting. Additional Fellowships were voted to be established in the Mid-West and on the West Coast of the United States.

Clearview

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Albert J. Crevello, M.D.

Diplomate, American Board of Psychiatry and Neurology, Inc., Medical Director

PLACEMENT SERVICE

The placement service of The Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 322 Doctors Building, Nashville 3, Tennessee.

Locations Wanted

A 31 year old, married physician, Protestant, at present in U. S. Army until June, Graduate George Washington University, Internal Medicine with specialty in Cardiology. Prefer community 10,000 or over. Available July. LW-70

Married physician, Protestant, graduate University of Tennessee, at present in U. S. Air Force. Desires general practice in or near large city. Available September. LW-71

A 28 year old, married physician, Protestant, graduate University of Tennessee 1949, three years training in general surgery, priority 4, completing residency June 1954, available July 1, 1954. Desires community 20-100,000. LW-76

A 38 year old, married physician, Catholic, priority 4, graduate Hahnemann Medical College, Philadelphia, Pa., GP-Surgery, community preferred, 5-10,000. Available two months after selection of community. LW-77

A 27 year old, married physician, Catholic, priority 4, graduate Loyola University, Chicago, 1952, wants locum tenens near Memphis July 1-September 30. General Practice. LW-78

A 32 year old, married physician, Hebrew, graduate University of Iowa College of Medicine, Board Certificate held in Urology, priority 4, desires clinic, assistant or associate, community 25,000-50,000. Available July 1, 1954. LW-83

A 31 year old, married physician, Catholic, graduate Ohio State University 1947, recently discharged from service, desires general surgery in community 10,000-50,000. Available September 1st. LW-84

A 31 year old, married physician, Protestant, graduate Harvard Medical School, eligible for American Board of Surgery, Military status, 5-A, Naval Medical Corps 2 years. General Surgery, desires clinic, community 10,000 or larger. Available August 1st. LW-88

A 30 year old, married, physician, Protestant, graduate Washington University School of Medicine, Priority IV, 2 years residency training-internal medicine; 1 year Gastroenterology (all approved). Desires clinic, assistant or associate, community 30,000 or more. Available July 1st. LW-91

A 28 year old, married, Christian, graduate Medical College of Virginia. Medical officer from July, 1948, to present time. Board Eligible for Pediatrics, desires clinic, Assistant or Associate in community 30,000 or more. Available July 1st. LW-92

A 39 year old, married physician, Protestant, graduate Yale, Board Certificate held in American Board

of Surgery, military status—not eligible. Specialty Surgery (incl. fracture surgery), desires clinic or solo, Associate in community 20,000 to 100,000. LW-93

A 29 year old, married, physician, Protestant, graduate George Washington University, priority IV, desires general practice in community 3,000-10,000, preferably with open staff hospital. Would consider if in small general practice clinic hospital. Available July 1. LW-96

A 42 year old, married physician, Catholic, graduate Tulane, Draft exempt. Specialty Internal Medicine, desires clinic, assistant or associate in community 50,000 or over. Available August, 1954. LW-98

A 33 year old, single physician, Protestant, graduate Faculty of Medicine, McGill University, Montreal, Canada. Priority IV. Medicine and surgery, clinic, assistant or associate in community 5,000-10,000. Available July 15. LW-100

A 31 year old, married physician, Catholic, graduate University of Tennessee, Priority IV, specialty training three years general surgical residency. Community 25,000 or more. Available immediately. LW-103

A 32 year old, single, Episcopalian, graduate Louisiana State University. Desires general practice in community 40,000 to 100,000. Available July 15, 1954. LW-105

A 29 year old, married Protestant, graduate New York Medical College, Priority IV, desires general practice in community 5,000 to 20,000. Clinic, assistant or associate. Available July 1st. LW-106

A 32 year old, married physician, Protestant, graduate Duke University, Priority IV. Would consider clinic, assistant or associate. Desires general practice in community 4,000 to 10,000 preferably East or Middle Tennessee. Available July 1st. LW-107

A 30 year old, married physician, Catholic, graduate Baylor University, Board certificate held in Thoracic Surgery. Desires associate in community 500,000-1,000,000. Available August 1. LW-108

A 32 year old, married physician, graduate University of Illinois, Board eligible in internal medicine, completing period of service in Navy. Prefers clinic. Community greater than 6-8 thousand. Available October. LW-109

A 29 year old, married physician, Lutheran, graduate Johns Hopkins, Board Certificate American Board of Surgery. Now on active duty. Available August 1st. Desires community moderate to large city, population 500,000-up. LW-110

A 36 year old, married physician, Lutheran, graduate University of Virginia, certified by American Board of Surgery. Priority 4, desires clinic, assistant or associate in community 15,000 and over. Available 60 to 90 days notice. LW-111

A 32 year old, married physician, Protestant, graduate University of Michigan, Diplomate American Board of Surgery. Category IV.

Would like association in community 20,000 to 150,000. Available immediately. LW-112

A 34 year old married, 2 children, Protestant, graduate University of Minnesota, presently in Army. Desires general practice in community 5,000 to 25,000. Available October 13. LW-113

A 28 year old, married physician, Catholic, graduate University of Tennessee, Priority 4-A. Desires General Practice with Surgery in community 25,000 or less. Would consider clinic or association. Available 60-day notice. LW-115

A 50 year old, married, Protestant, graduate Vanderbilt University, desires general practice in community 10,000-25,000. Would consider assistant or associate. Available September, 1954. LW-117

A 32 year old, married, Protestant, graduate Duke University, priority IV, formerly with U. S. Public Health Service. Entering private practice. Desires general practice, clinic, would consider assistant or associate. Available July 1 or later. LW-118

A 28 year old, married, Protestant, graduate University at Louisville, presently on active duty, available immediately, desires general practice, clinic, industrial, assistant or associate. LW-119

A 30 year old, married, Episcopalian, graduate University of Virginia, resigning from regular army, Board eligible—Ob.-Gyn. No preference in size of community. Available August 1. LW-121

A 29 year old, married, Protestant, graduate Bowman Gray School of Medicine, Residency in Internal Medicine, priority IV-C, community preferred 20,000 or more. Prefers clinic, industrial acceptable. East or Middle Tennessee. Available Preferably after January, 1955. LW-123

A 34 year old, married, Roman Catholic, graduate St. Louis University, Board certificate Pathologic Anatomy, presently in USAF, available November, 1954. LW-124

A 30 year old, married physician, graduate University of Tennessee, Priority IV-A. Desires general practice. Available Feb. 1, 1955. LW-125

A 35 year old, married, Protestant, graduate Oklahoma University, Priority III. Specialty training—general surgery 4 years. Clinic, assistant or associate. Available now. LW-126

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Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

SEPTEMBER, 1954

Number 9

The authors consider the question of exploration of the common duct—the indications, the missed stones and possible hazards.

EXTRA-HEPATIC BILIARY SURGERY: AN ANALYTICAL REPORT OF 1,051 OPERATIVE CASES*

CHAS. C. TRABUE, M.D. and B.F. WOOLDRIDGE, M.D., Nashville, Tenn.

Exploration of the common bile duct is an operation which has grown greatly in popularity in the past thirty years. Almost all surgeons are now prepared, under certain circumstances, to accompany their cholecystectomies with choledochotomies. However, even a brief glance at the literature reveals that there is no unanimity of opinion among surgeons as to what percentage of cholecystectomy cases should also have a choledochotomy. This incidence is reported from some good clinics as being as low as 10 per cent and from other equally good clinics as being higher than 40 per cent.^{1, 2, 6} The inconsistency of the recommendations which come from some of the leading abdominal surgeons of the country leave us somewhat bewildered on this point.

Analysis of Cases

We felt that it would be instructive to analyze the experience of Nashville surgeons in this field. In order for the study to be as representative as possible the work

done by all surgeons in Vanderbilt University, Mid-State Baptist and St. Thomas Hospitals was analyzed over a period of approximately three years ending in July of 1953. The series represents the private work of 68 different surgeons and 23 house officers. Table I summarizes these operative procedures. During this period there were 1,051 operative cases of extra-hepatic biliary surgery. Of these operations, 982 were cholecystectomies and only 26 were cholecystostomies. There were also 26 secondary explorations of the common duct. The remaining 17 cases represent varying types of cholecysto- or choledocho-enteric anastomosis or pancreatico-duodenal resections for primary disease of the pancreas.

Table II is a summation of the pathologic changes encountered in those 982 patients

Table I
OPERATIVE PROCEDURES CARRIED OUT IN
THREE GENERAL HOSPITALS

Operation	Hospital			Total
	I	II	III	
Cholecystectomy	251	352	379	982
Cholecystostomy	8	2	16	26
Secondary choledochotomy	10	8	8	26
Biliary shunt or other procedure for primary pancreatic disease	12	0	5	17
Totals	281	362	408	1,051

*Read before the meeting of the Tennessee Chapter of the American College of Surgeons, April 20, 1954, Nashville, Tenn.

Table II
PATHOLOGIC FINDINGS IN 982
CHOLECYSTECTOMIES

Pathologic Findings	Total Cases	With Without Path.		
		Stones	Stones	Groups
		%	%	%
Cholesterolosis with stones	12	1.3	—	—
Cholesterolosis without stones	15	—	1.5	2.8
Chronic cholecystitis with stones	601	61.2	—	
Chronic cholecystitis without stones	81	—	8.2	69.4
Acute cholecystitis with stones	123	12.5	—	
Acute cholecystitis without stones	14	—	1.4	13.9
Normal gallbladder with stones	105	10.7	—	
Normal gallbladder without stones	24	—	2.5	13.2
Carcinoma of gallbladder with stones	4	0.4	—	
Carcinoma of gallbladder without stones	2	—	0.2	0.6
Acute hepatitis	1	—	0.1	0.1
Totals	982	86.1	13.9	100.0

whose gallbladders were removed. Cholesterolosis was diagnosed by the pathologist in only 2.8 per cent of the cases, twelve cases with stones and fifteen without stones. Almost 70 per cent of the patients had chronic cholecystitis, 601 with stones and 81 without stones. Acute cholecystitis was found in only 13.9 per cent of this series. The diagnosis of normal gallbladder with stones in 105 cases is striking because many surgeons and pathologists feel that some degree of inflammation is invariably present in gallbladders containing stones.⁵ Ninety-six of these 105 normal gallbladders were reported from one hospital (that is, by one pathologist) in sharp contrast to one case and eight cases respectively from the other two hospitals. This obviously represents a considerable individual variation in the criteria used by various pathologists in diagnosing chronic cholecystitis. An incidence of normal gallbladder without stones in 2.5 per cent of the total cases is about the same as that reported in most other series. It is noted that stones were present in 86.1 per cent of this entire group of 982 cholecystectomies.

Table III represents the primary patho-

Table III
PATHOLOGIC FINDINGS IN 26
CHOLECYSTOSTOMIES

Pathologic Findings	Hospital			Total Cases
	I	II	III	
Acute cholecystitis with stones	4	1	7	12
Acute cholecystitis without stones	2	0	0	2
Chronic cholecystitis with stones	1	1	3	5
Carcinoma of pancreas	0	0	1	1
Chronic pancreatitis	0	0	3	3
Cirrhosis of liver	0	0	1	1
Penetrating wound	0	0	1	1
Carcinoma of gall-bladder with stones	1	0	0	1
Totals	8	2	16	26

logic changes found in the 26 patients who had cholecystostomy. Cholelithiasis was associated in 69.2 per cent and the greatest number of the cholecystostomies were done for acute cholecystitis with cholelithiasis. Although cholecystostomy is not performed as frequently today as it was in former years it, none-the-less, should have a respectable

place in the surgeon's armamentarium. It is a procedure which has its principle use in the desperately ill patient who has advanced acute cholecystitis and for whom the simplest possible surgical procedure is indicated. And it may be utilized to great advantage in any case in which the landmarks are so obscured that visualization of the ducts and vessels is unusually difficult. In this series of 1,051 operative cases cholecystostomy was performed in only 2.4 per cent.

Indications for Choledochotomy

In making an analytical survey such as this, one would like very much to know why the common duct was explored in certain cases and not explored in others. However, a number of the hospital records are not sufficiently complete to make this point clear and we can only surmise concerning what the Nashville surgeons consider as indications for choledochotomy. We would like to discuss our own convictions on this point together with a brief review of some phases of the subject from the literature.

The decision to explore the common duct must be based on the presence of certain symptoms or signs which constitute either a positive or a relative indication for choledochotomy. There are only *three positive indications*:—(1) an enlarged or thickened common duct; (2) palpable stones in the common duct; (3) history or presence of obstructive jaundice.

Probably all can agree that any of these findings makes exploration of the duct mandatory. But what is the definition of an *enlarged or thickened common duct* and how often does the surgeon examine the duct carefully enough to determine whether it is enlarged or thickened? It is amazing how difficult it is to find an anatomical description of the common duct in which an exact measurement is given of the size of the normal duct. Gray's *Anatomy*, for example, states that the normal duct is the size of a goose quill! Callander's *Surgical Anatomy* does not give any measurement, and in some twenty odd articles on common duct surgery taken from the recent literature there is no discussion of this point in terms of accurate measurement.

We believe that there is a great discrep-

ancy in the minds of different surgeons concerning the normal and wonder if the general surgeons of this organization are in any agreement on this point. The reason that we belabor this point is that, although most surgeons are in general agreement on the indications for choledochotomy, there is certainly a tremendous difference in the percentage explored in different groups. If some surgeons consider a 9 mm. duct as being enlarged and others consider anything under 15 mm. as normal, then this difference of opinion might well be a factor in the wide variation in the number of explorations. And it would make it signally important that we have in our minds a figure which actually represents the normal and that we make a practice of accurately estimating the duct size in questionable cases. (Cunningham's *Anatomy* states that the normal common duct is 6 to 7.5 mm. in diameter, and this figure is confirmed by several other references.)

A careful dissection is necessary to make

an accurate estimate of the size of the duct. An incision of the peritoneum over the duct is made and either a blunt or sharp separation of the vascular fatty tissue overlying the duct is carried out in order to visualize as much as 180 degrees of its circumference. When this has been done, various sized Bakes' dilators may be placed alongside the duct in order to select the one which most closely approximates its diameter. Figure 1 depicts this method of estimation of size. A means of accurate estimation of the size of the duct seems fundamental to proper decision regarding choledochotomy. Waugh,⁸ in reviewing 175 cases of choledocholithiasis, found that only 15 per cent of the ducts were normal to inspection and palpation.

The *second* positive indication for exploration of the duct is the palpation of a stone within the duct. In a great many of the operative notes which we have studied the only mention made of the common duct was a word to the effect "no stones were palpated in the common duct." In general, the

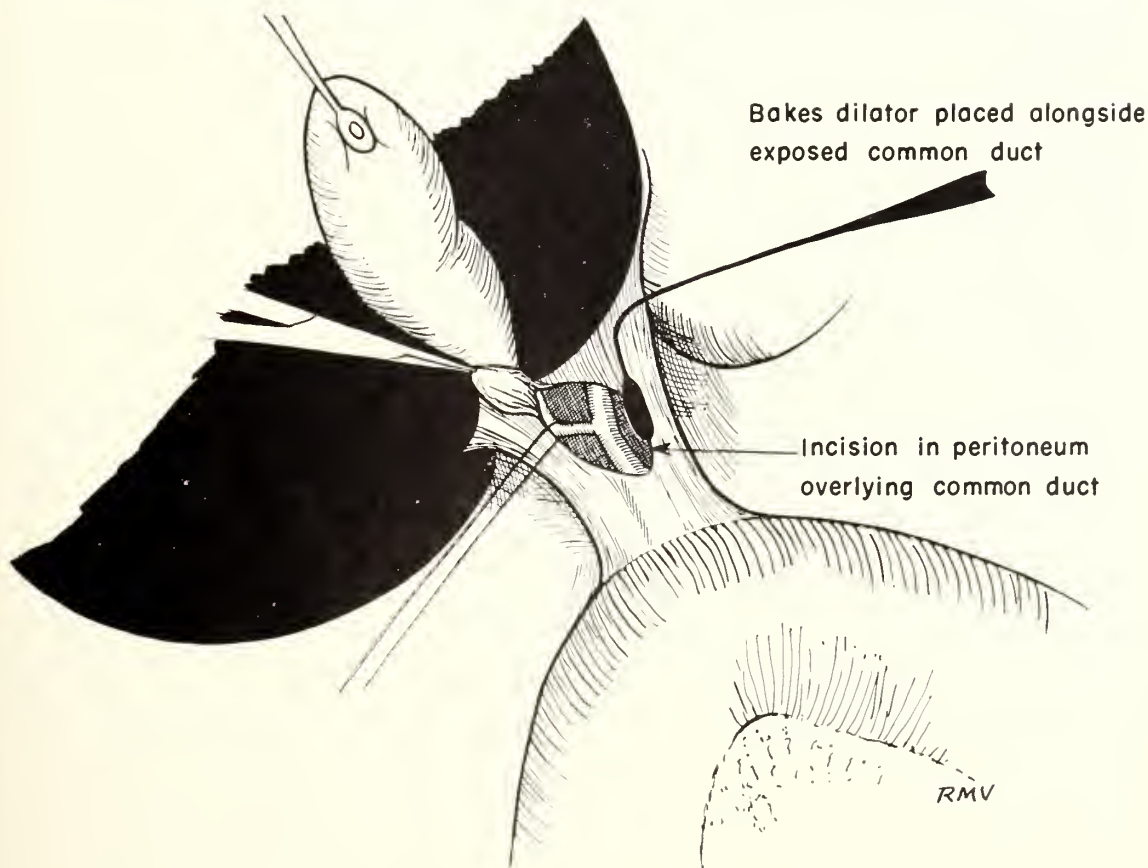


FIG. 1

Illustration of Method of Estimating Common Duct Size

presence or absence of calculi within the common duct can rarely be determined by palpation of this structure. Surgeons have reported being able to palpate only 5 to 15 per cent of common duct stones. Obesity and inflammatory changes in the area are the chief adverse factors. Moreover, the most common site for an overlooked stone is just distal to the ampulla of Vater, a region that does not lend itself to accurate palpation.

The *third* positive indication for exploration of the duct is the presence of obstructive jaundice or a history of it. Collected figures are very close to agreement that 50 per cent of patients with jaundice and cholelithiasis will be found to have choledocholithiasis at operation. Only one-half of those patients with choledocholithiasis will be found to have jaundice or a history of it.¹

After checking off these three positive indications for exploration of the duct, we must then consider the *relative indications*. Those relative indications which are well accepted are:—(1) frequent attacks of biliary colic; (2) history of chills or fever; (3) multiple small stones in the gallbladder, particularly in the presence of a dilated cystic duct; (4) X-ray evidence suggestive of common duct stones; (5) sediment in bile aspirated from the common duct. It is believed that most surgeons accept these signs and symptoms as being highly suggestive of common duct stone and that they will explore the duct when any of these indications are present.

In addition, the following conditions have been named by some surgeons as indications for choledochotomy:— (1) the non-calculous gallbladder with biliary tract symptoms; (2) the small contracted gallbladder which contains stones; (3) enlargement of the head of the pancreas; (4) history of nausea and vomiting; (5) history of epigastric rather than right upper quadrant pain. These conditions are accepted by some but certainly not by all surgeons as demanding a choledochotomy. Time does not permit further discussion of their significance.

Discussion

In the cases which we have studied in

Nashville, there were 1,008 patients who had either removal of, or drainage of the gallbladder, and 863 of these had cholelithiasis. Table IV shows the incidence of

Table IV

INCIDENCE OF CHOLEDOCHOTOMY IN 863 CASES OF CHOLELITHIASIS

Total cases of cholecystectomy or cholecystotomy with stones	863	
Ducts explored	134	15.5%
Ducts in which stones were found	64	47.7%
Percentage of entire series in which stones were found in choledochotomy		7.4%

choledochotomy in this series. Of these 863 patients with stones, the common duct was explored in 134. This represents an exploration incidence of 15.5 per cent of the patients having cholelithiasis. Of these patients who had choledochotomies stones were found in 47.7 per cent. Of all the patients who had stones in the gallbladder, stones were recovered from the common duct in only 7.4 per cent.

A comparison of these figures with the many similar series reported in the literature reveals that the Nashville surgeons are very conservative in the field of choledochotomy. In 1952 Strohl⁷ published a collected series of over 25,000 cases gathered from the data of 23 different authors. Only 4 of the 23 authors reported a percentage of ductal exploration as low as ours in Nashville. In the large series of Strohl the average percentage of common ducts explored was 23, whereas our percentage was only 15.5 per cent. The interesting question, of course, is whether we are overlooking an unreasonable number of stones by exploring such a low percentage of ducts. Of all the patients who had cholelithiasis we recovered stones in only 7.4 per cent, whereas the average in the 25,000 case series of Strohl was 11.3 per cent. Does this mean that out of every 100 cases of cholelithiasis we are leaving stones in the common duct of four patients? Perhaps it is even more than this because eight of the 23 authors reported stones in well over 16 per cent of their cases. This seems rather conclusive evidence that we are leaving a large number of stones behind, but the really significant question is: How many of these re-

maining stones will ever be symptomatic? A true answer to this question is difficult and could only be determined by a careful follow-up of the entire series of 363 patients.

We have also analyzed those cases who had secondary choledochotomy. Table V

Table V
SECONDARY CHOLEDOCHOTOMY

<i>Pathologic Findings</i>	<i>I</i>	<i>Hospital</i> <i>II</i>	<i>III</i>	<i>Total</i> <i>Cases</i>
Common duct stone	5	5	5	15
Stricture of common duct	1	1	3	5
Stenosis of ampulla	1	0	0	1
Chronic pancreatitis	2	1	0	3
No pathologic changes	1	1	0	2
Totals	10	8	8	26

shows these cases and represents those patients who underwent a choledochotomy after having previously had a cholecystectomy or cholecystostomy with or without choledochotomy. It will be seen that of these 26 cases, 15 or 57 per cent did have stones removed at the time of secondary choledochotomy. It is assumed that the majority of these stones were overlooked at the time of the primary operation, although it is a well accepted fact that stones can form in the common duct or in the hepatic radicals of the ductal system.¹

One might well ask whether the number of secondary choledochotomies carried out in a community can be considered as any sort of index of the number of common duct stones being overlooked at the primary operations in that community. Within certain limits we believe the answer is yes. And we believe that only 26 secondary choledochotomies in a series of 1,051 operations on the extra-hepatic biliary system is very creditable. Although there were 863 patients who had gallstones found at the primary operation stones were overlooked and found later in only 15 or 1.7 per cent of this number during the same three year period. Although this is not the same as a follow-up, it certainly suggests that a very small percentage of our gallbladder patients have had postoperative symptoms of sufficient magnitude to require re-exploration.

Operative cholangiography as a definitive adjunct to bile duct surgery has not met with universal acceptance, although its proponents list numerous advantages.³ The procedure was utilized in this series of 1,051 cases on 57 occasions. In several of these cases the cholangiograms obviated choledochotomy although the history suggested common duct stones. The institution of a standardized technic and closer coordination with the radiology department might well further the popularity of this procedure.

Of the 1,051 operative cases, 24 expired before leaving the hospital,—an overall mortality rate of 2.2 per cent. Eight of these deaths occurred after simple cholecystectomy, giving a mortality rate of 0.9 per cent for this operation. Among the 26 secondary choledochotomies there were three deaths, giving a mortality rate of 11.5 per cent for secondary choledochotomy. Eleven deaths occurred following cholecystectomy with associated choledochotomy, a mortality rate of 8.2 per cent. Thus the mortality rate for choledochotomy with cholecystectomy is nine times as great as for simple cholecystectomy. All of these rates compare favorably with other similar series reports. But many surgeons believe that this increased mortality rate in choledochotomy is due to the gravity of the existent illness and the prolonged presence of intermittent biliary obstruction, cholangitis and jaundice which are so often present in the choledochotomy cases and so rarely present in the simple cholecystectomy cases. These surgeons state that a carefully done exploration of the bile duct does not increase the operative risk and that the danger lies not in performing choledochotomy but rather in neglecting to do so. If this statement is actually true then we should certainly be exploring a much higher percentage of ducts. But there is little reason to accept such a statement, since there are no published figures to sustain it.

A more detailed analysis of the fatal cases in the present series is of interest in this regard. (Table VI.) If we divide the choledochotomy cases into those with common duct stones or other grave pathologic

Table VI
ANALYSIS OF HOSPITAL DEATHS

	Cases	Deaths	Mortality Rate
Entire series	1,051	24	2.2%
Cholecystectomies	982	8	0.9%
Secondary choledochotomies	26	3	11.5%
Choledochotomy associated with cholecystectomy	134	11	8.2%
Choledochotomy cases with grave pathologic changes	66	8	12.1%
Choledochotomy cases without grave pathologic changes	68	3	4.4%

findings and those without grave pathologic changes we find a mortality rate of 12 per cent in the first group and of 4.4 per cent in the latter group. The rate of 12 per cent may well be largely due to the serious pre-operative condition of the patients. But there is nothing to suggest that the rate of 4.4 per cent, which is five times as high as the rate for simple cholecystectomy, is due to anything except the fact that choledochotomy is a much more serious operation than is cholecystectomy.

Summary

An analysis of all gallbladder surgery in three Nashville hospitals over a three year period has been made. From a total of 1,051 cases there were 863 patients with stones in the gallbladder. The common duct was explored in 15.5 per cent of the patients with cholelithiasis and almost half of the ducts explored yielded stones. During this same period only 26 secondary cho-

ledochotomies were done and stones were found in 15 of these. A study of the mortality in this series suggests that even in the absence of grave pathologic changes the death rate is five times higher in cholecystectomy if exploration of the common duct is also carried out. There is nothing in this study to indicate that the exploration of a higher percentage of common ducts would accomplish any decrease in either morbidity or mortality following gallbladder surgery.

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The hazards of the X-ray in the hands of the inexperienced, ignorant or careless doctor is well emphasized in this paper.

POSSIBLE INJURIOUS EFFECTS FROM DIAGNOSTIC FLUOROSCOPY AND ROENTGENOGRAPHY*

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The hazards encountered in the field of X-ray have long been the concern of those directly and indirectly associated with its use. This discussion will serve in part to again remind physicians of these hazards and to review some of the present day concepts in radiation protection. The widespread use of the X-ray in general practice has caused considerable concern to many scientists working in the field of radiation protection. It is felt that this is a very timely subject and that it will not be amiss to take stock of our use of the X-ray in fluoroscopic and diagnostic work. The number of physicians who have had no experience in dealing with the hazards of radiation and have purchased an X-ray machine is appalling. The carelessness of physicians experienced in the use of X-ray is equally disturbing. Too often it is so difficult to remain cognizant of the dangers of something as insidious as the X-ray which, when used daily, has no immediate effect but might well be lethal or have an irreversible effect when one considers the accumulative effect over a period of years.

There are two basic considerations in diagnostic radiology. First, the effect on the patient, and second, the effect on the operator. The three anatomical systems which commonly may suffer from excessive radiation are (1) cutaneous, (2) hemopoietic, and (3) reproductive.

Effect of Radiation on the Skin

The radiation effect on the skin of patients from diagnostic fluoroscopy and roentgenoscopy is usually inconsequential. If, however, the mechanical safety precautions are not closely adhered to, the skin of the patient may be the site of a radiodermatitis and possibly squamous carcinoma. Normally, a fluoroscope oper-

ated at proper voltage and milliamperage and with proper filters delivers to the skin of the patients being examined approximately 6 r/m.¹ This is a safe amount of X-ray if the patient is not subjected to excessive fluoroscopy. Unfortunately all equipment does not deliver this amount of radiation. Sounenblich et al.² in a survey found many fluoroscopes in private physicians' offices which had outputs of 90 to 100r/m. It is obvious that this is a real hazard since only a few minutes of exposure could cause serious cutaneous reactions. Lengthy and multiple examinations should always be avoided as far as is practicable. Since the patient is usually not exposed chronically to radiation, the hemopoietic and reproductive systems seldom receive enough radiation to give us concern.

The most important phase of radiation hazards is concerned with the physicians and operators of the machine. Rarely is the direct beam at fault since most physicians are well aware of its danger and stay away from it. It is scattered radiation mostly from the patient through whose body the X-ray beam is passing which is responsible for the chronic exposure to radiation.

The cutaneous system is commonly the site of one of the severe hazards of X-ray for physicians. The skin of the hands is most commonly involved. Leddy and Rigos³ reviewed the cases of 80 physicians who entered the Mayo clinic between 1934 and 1939 complaining of radiodermatitis. The hands were the site of injury in 70 instances. Of these, 21 had epitheliomas and 9 had benign ulcers. There were only 5 roentgenologists in this group. Two of these had been injured while receiving treatment, one was a pioneer in the field and the other two had been roentgenologists for many years. The great majority of the injuries in the entire group were from fluoroscopy. The authors noted that "This striking preponderance of injured persons

*Read before the meeting of the Tennessee State Medical Association, April 19, 1954, Nashville, Tenn.

who were not roentgenologists probably must in general be referable either to lack of proper roentgenologic equipment or to deficient knowledge; possibly in some cases it may be caused by insufficient experience or by carelessness." The great majority wore no gloves or protective device and in some instances used fluoroscopy for reduction of fractures and for search for foreign bodies.

Stevenson⁴ in writing on protection during roentgenoscopy strongly condemned the reduction of fracture and searching for foreign bodies under the roentgenoscope. During World War II the army issued orders forbidding the use of the fluoroscope to reduce fractures or to search for foreign bodies. These uses are particularly dangerous since the hands are in the direct beam of radiation. From all available knowledge it appears that this is sound advice and that the practice of reducing fractures or any other procedure during which the physician is exposed to the direct beam should be abolished.

In roentgenoscopy of the chest, the skin of the examining physician should not receive excessive radiation if the physician is at all careful and his equipment is calibrated correctly. This is not true in examinations of the stomach, small bowel and colon when the palpation of the barium filled viscus is so important for an adequate diagnosis. Here the examination should not be attempted by an inexperienced examiner. The examining hand should always be covered by a lead protective glove or mitten. The danger of skin damage is so insidious that many physicians become careless. If several roentgens per day are received on the hands, in ten years the hands will have received a large amount of radiation and the possibility of irreversible changes occurring is very real. The first changes are hyperkeratosis and telangiectasis, later ulcer formation and squamous carcinoma. It is impossible to determine the amount of radiation that is required to produce serious changes. Morgan¹ states that the total quantity probably must exceed 5,000 r. The one known fact is that any radiation is too much and that all practical means to min-

imize the dosage must be done. Leddy⁵ so aptly states that the main cause of radio-dermatitis among physicians seemed to be ignorance and carelessness.

Effect of Radiation on the Hemopoietic System

The second system to be seriously affected by radiation encountered in diagnostic roentgenoscopy and roentgenography is the hemopoietic system. The physician or operator may be exposed to minute amounts of total body irradiation daily for a period of years with very serious effect on the hemopoietic system with no obvious skin effects. The source of radiation is usually secondary to the X-rays penetrating the patient's body and are scattered in all directions in a given area. The changes in the blood are leukopenia and depression of the bone marrow. Morgan states "There have been some studies which appear to indicate that leukemia is more prevalent among radiologists and other physicians who use roentgen rays than in the general population. Although this relationship is difficult to prove from the statistical evidence at hand, it seems fairly clear that excessive radiation of long duration can produce malignant changes in the blood forming tissue." The maximum permissible exposure of the total body of an individual should not exceed 0.3 r per week.⁶ This is a very small figure and it requires the utmost constant vigil of adhering to the known methods of protection to maintain this low dosage if a physician does any number of examinations. The greatest source of danger of exposure from secondary radiation is the fluoroscopic examination, particularly of the gastrointestinal tract. These examinations should never be attempted by an inexperienced examiner.

Effect of Radiation on the Gonads

The third system which is subject to changes due to the X-ray is the reproductive system. Apprehension as to sterility and impotence is often absurd and has been exaggerated since rather large doses are required to produce sterilization. However, during the past several years there has been considerable interest in the possible effect on future generations through muta-

tions caused by roentgen radiation. Experimentally the rate of new mutations in the fruit fly can be increased by X-ray. It is impossible to state what effect X-ray will have in future generations of man. However, it is the opinion of those working in the field of genetics and radiation protection that the total accumulative dose to the reproductive organs during the reproductive life should not exceed 50 r.⁷ Obviously this requires rigid observance of protecting the gonads by a lead apron during possible exposure to roentgenoscopy and roentgenography. This is particularly true in the fluoroscopy of individuals in the horizontal position, since the gonads are in the field of the greatest amount of secondary radiation.

Effect of Radiation on the Fetus and Growing Child

There has been considerable concern to many physicians as to what effect radiography of the pregnant uterus will have on the fetus, such as encountered in roentgen pelvimetry and other diagnostic procedures. There is no question that radiation is harmful to the fetus but the problem is how much can be given with safety. It is known that between the second and sixth week of gestation the fetus is most susceptible to radiation. Although the problem of gene mutation by X-ray is by no means solved, it is recommended that long fluoroscopic examinations, spine films and pyelograms should be limited during this period.⁸

There is one other hazard worthy of mentioning,—namely, the possibility of the disturbance of growth in the growing ends of the bones of children exposed to excessive radiation. Radiographic and fluoroscopic examinations of infants and children should be limited, since experimentally a cumulative radiation dosage of 100 r. should not be exceeded.

Safeguards Against Radiation Effects

The hazards of diagnostic roentgenology are very real, but it must be remembered that with proper precautions and experience the danger to patients and physicians can be minimized. The following precautions are essential to those who deal with fluoroscopy.

1. Proper calibration of the equipment with a clear understanding of the factors which are necessary to maintain safety:

(1) Restriction of the tube current to 4 ma. or less.

(2) Maintenance of tube to patient distance of 16 to 18 inches.

(3) Inclusion of 3 mm. of aluminum filtration.

(4) Restriction of the size of the field of irradiation to at least 8 x 10 inches.

2. At least 15 minutes of adaptation to darkness before fluoroscopy.

3. Develop speed during the examination.

4. Use of leaded gloves and aprons (lead equivalent of 0.4 to 0.5 mm.).

5. In gastro-intestinal work the use of the barium filled viscus as a protective barrier.⁹

6. Keep hands out of the field as much as possible.

The precautions in diagnostic roentgenography are similar to those in fluoroscopy. Leaded barriers between personnel and equipment is essential. Personnel should never expose themselves to the direct beam by holding patients or cassettes.

By far the outstanding and most important precaution is proper knowledge and training in the basic principles of radiation. This is not an impracticable feat, and if a physician is going to use X-ray in his office he owes it to himself to take the time to learn some of the facts which are so well known and were discovered by that group of pioneers who had to pay so dearly to give us the information. The overwhelming number of injuries to physicians are traced to ignorance and carelessness. With the magnitude of the present day use of X-ray in diagnosis, we should take stock of our everyday practices and make necessary changes to reduce radiation to a safe level.

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Discussion

BEN R. MAYES, M.D. (Nashville): I have very little to add to Dr. Ivie's excellent presentation of the dangers of fluoroscopy.

Since the injurious effects of X-radiation are cumulative and insidious, it is not possible for one to know that he is being injured until it is too late. Therefore, it is necessary to set up a group of rules in one's own mind in regard to fluoroscopic technic. These rules must be rigidly adhered to without even one exception, if radiation delivered to the fluoroscopist is to be held to a

minimum. One has to curb a tendency to break his technic almost every day. For example, when doing a barium enema on a patient with an abdominal mass, it is a great temptation to palpate the mass barehandedly to determine its relation to the barium-filled colon.

My own rules are as follows:

1. Always wear 15-inch leaded gloves on each hand regardless of length or type of fluoroscopy. Gloves are replaced with new ones every six months.

2. Always wear leaded rubber apron. This apron should have the equivalent of 0.5 millimeters of lead and should be worn up high over the sternum and clavicle. I prefer the plain apron to the cloth-covered type because the leaded rubber becomes cracked with age and this cracking is difficult to detect if the rubber is covered with cloth.

3. Make fluoroscopy time as short as possible.

4. Keep the aperture between the shutters as small as possible.

I would like to stress the point of avoiding all fluoroscopy during the early stages of pregnancy. We do not know exactly what the dangers of X-radiation are to the very young fetus, but until we do the very young fetus should be spared all X-radiation. For example, nausea and vomiting may be symptoms of early pregnancy, and until pregnancy is ruled out extensive X-ray examinations of the G. I. tract should not be done.

Renal Papillary Necrosis. Aye, Ralph C., *Diabetes* 3:124, 1954.

Acute destruction of the renal papillae without suppuration within the affected segment is a rarely reported but disastrous renal complication of diabetes mellitus. The reported frequency at autopsy varies from 3 to 5 per cent in diabetic patients and is less than 0.1 per cent in non-diabetic patients.

The diagnosis of renal papillary necrosis is difficult. In the absence of passage of a papilla in the urine it is almost impossible. Retrograde urograms may help if structural changes have occurred which increase the size of the minor calyces or produce negative shadows in the larger calyces or pelvis due to sloughing of the papillae. In the early stages or in those cases in which no sloughing has occurred the urogram may appear normal. Symptomatology mentioned includes hematuria, pyuria, flank pain, azotemia, albuminuria, dysuria, urgency, frequency, chills, fever, nausea, vomiting, stupor and elevation of the white blood cell count. These are but the symptoms and signs of acute pyelonephritis. In this series one-half of the patients on admission had stupor or coma, nausea and vomiting. All had leukocytosis and depression of the carbon dioxide combining power to acidotic levels. The nonprotein nitrogen was elevated in all cases.

In all but two cases, the urine contained only a few white blood cells and red blood cells on admission. One-half had normal temperature and only three complained of chills. The symptoms and signs of the admitting illness too often obscured the urinary tract lesion.

Often the lesion will be missed if the examiner's attention at the autopsy table is focused upon the surrounding acute pyelonephritis with its bacteria and white blood cells and not on the papillae. Frequently the symptoms and signs of the primary illness tend to obscure the urinary tract pathology and valuable time is lost in treatment.

Therapy employing large doses of the antibiotics would appear to be the only rational course for the diabetic since the disease is so often bilateral. One of the author's patients had demonstrable healing after receiving large doses of antibiotics. Relief of ureteral obstruction, of course, is indicated if present. Some consider nephrectomy as life-saving in those patients in whom the diagnosis of unilateral disease is made.

A realistic approach to the problem of diagnosis and therapy requires awareness of the possibility of the lesion and search for urinary tract infection in the complicated diabetic.

(Abstracted for the Tennessee Diabetes Association by Addison B. Scoville, Jr., M.D., Nashville.)

The study of bone marrow aspirate has many limitations, especially when a diagnosis is expected in the absence of pertinent clinical data or adequate studies of the peripheral blood. These factors should be well understood by those who have occasion to request consultation on these specimens.

THE CLINICAL USE OF BONE MARROW STUDY*

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Bone marrow studies are being used with increasing frequency as aids in clinical diagnosis, but opinions differ widely about the usefulness and the specific indications for this diagnostic study. Since interpretation of marrow findings is a somewhat specialized skill, the physician who orders the test may consider himself incapable of examining the marrow specimen and deciding upon its meaning. He must rely then on the opinion of someone else. Since the amount of information obtainable varies greatly and depends upon several factors, which are not easily summarized, the practicing physician may feel a lack of any distinct ideas about the usefulness of the procedure and its relation to other types of examination. He may feel that he is at a disadvantage in deciding about the indications for the test and in using the reported results.

On the other hand the person who is asked to give a report on the bone marrow examination may feel that he, too, has certain disadvantages, whether he is a pathologist or an internist interested in hematology. He may hold the opinion that the bone marrow examination is not indicated in the case under study. If he is given slides to interpret he may believe, for several reasons, that he has not been given an optimum opportunity to arrive at the best interpretation. For example, he may have been denied the opportunity to aspirate the marrow himself, and thus have been deprived of the information obtainable at the time of aspiration, or he may find that the preparations given him are not technically

adequate. The experienced person who does a marrow aspiration learns much during the procedure about the hardness of the bony cortex, and the presence or absence of a distinct medullary cavity. The pain of aspiration as indicated by the reaction of the patient helps to show whether marrow has been obtained. When the marrow films turn out to be hypocellular, it is particularly important to interpret them in relation to this information obtained at the time the aspiration is done. The hematologist needs also the information that can be derived from a routine study of peripheral blood, which should usually be performed on the same day as the marrow examination. A technically good blood film is especially necessary. Finally, and of great importance, the person interpreting the marrow needs complete clinical information about the patient.

In general, then, if it is at all possible, the physician who is to make a report on the marrow should have a chance to examine the patient and to review the blood studies. The decision on whether or not a marrow study is necessary should be left to him. If it is to be done, he should perform it.

Certainly laboratory tests have the advantage that they represent isolated objective measurements of a constituent of the body. They can be performed by a technician who knows nothing about the patient and who, therefore, is in no danger of prejudicing his report on the basis of other types of related information. Bone marrow preparations can also be reported under such sterile conditions, but often no significant or helpful opinion can be given. The meaning of the marrow picture is so closely interrelated with other types of information that often it can be of greatest value only when it is interpreted in the light of these relation-

*Read before the Meeting of the Tennessee State Medical Association, April 21, 1954, Nashville, Tenn.

†From the Medical Division, Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn., under contract with the United States Atomic Energy Commission.

ships. Therefore, it is usually better to sacrifice the objectivity of an independent laboratory procedure for the sake of an integrated report.

Difficulties and Essentials of Diagnosis

The hematologic consultant who sees a cylindrical cardboard box of slides in his mail has mixed emotions. He is flattered that someone has taken the time and trouble to ask his opinion and he may be elated by the prospect of some cytologic detective work. At the same time he has misgivings. The marrow films may be technically unsatisfactory and there may be no film of peripheral blood or clinical information. If the slides cannot be interpreted, i.e., too thick, poorly stained, or containing only a few marrow elements highly diluted with blood, he tries to think of some tactful answer to the sender. Maybe, trying to be helpful and in a gambling spirit, he makes a guess at the diagnosis. He may regret this, when he finds that slides have also been sent to several other hematologists and that he is involved in a type of multiple mail-order diagnostic guessing game. The physician who sends out the slides may find that the different diagnoses received from several hematologists for the same patient make a rather whimsical set of conflicting answers, and he concludes that hematologists are an erratic group who can never agree on anything. He little realizes that any one of the group could have arrived at a good understanding of the patient's disease if he had had a chance to examine the patient and to perform laboratory tests according to his own technics. Furthermore, under these conditions there would be relatively little disagreement among hematologists in most cases, except possibly for terminology.

There are occasions when it is impractical for the marrow study to be performed under ideal conditions, and when it may be justifiable to mail the marrow preparations to a hematologist for interpretation. The following should always be included when this is done:

1. A summary of the history and clinical findings in the patient.
2. Standard values on the blood, includ-

ing hemoglobin, packed cell volume, and leukocyte count.

3. Films from peripheral blood.

4. Films from bone marrow (preferably both stained and unstained).

5. Information about the site of marrow aspiration, amount of material obtained, and method of preparation of the film.

In considering bone marrow studies there are certain gaps in our knowledge of which we should be acutely aware. We may think of the bone marrow as a tissue in which most of the blood cells are developing and which should reveal to us the state of blood cell formation. Unfortunately, marrow studies fall far short of giving this information. Unlike the peripheral blood, which is reasonably well mixed and homogeneous, the marrow is patchy in its distribution and it is difficult to be certain that we are sampling a representative area. Furthermore, we obtain only a static picture,—a group of cells obtained at a given moment. We may say that there is active granulopoiesis, for example, when what we really mean is that there are many early cells of the granulocyte series, in various stages of development. We infer that they are maturing and that many leukocytes are being formed, but we have no real information about their rate of maturation. It is possible that they are developing very slowly and that the total granulocyte output is lower than normal.

One of our great difficulties is that aspirated marrow specimens are always diluted with blood from the marrow sinusoids, and the degree of dilution is extremely variable. Therefore quantitative studies on aspirated marrow are virtually impossible. If one is lucky enough to obtain some good clumps of marrow elements, one can be quite sure that there is no dilution within these clusters of cells, and can make quite accurate determinations of the relative numbers of the various types of marrow cells. When no clumps of developing cells are seen, there is the difficult decision of whether the marrow is hypocellular or whether the aspiration was technically unsuccessful. In this situation the preliminary information obtained at the time of aspiration is helpful, as is also the gross examination of the

marrow films for the presence of fat. Here, too, the comparison with the peripheral blood film serves to show whether the specimen aspirated from the marrow cavity is practically identical with peripheral blood. When no cellular aspirate can be obtained it is risky to draw any conclusions about the content of the marrow cavity. It may be necessary to repeat the aspiration, or to do a biopsy of the bone including cortex and marrow, to answer the question. Biopsies that include the cutting out of a specimen of solid bone and marrow have the advantage that the factor of dilution is avoided. However, they represent a more formidable procedure. The specimens are usually examined in the form of fixed decalcified sections. Although these sections are valuable when no cellular material is obtainable by aspiration, they are somewhat unsatisfactory in revealing cytological detail.

Some hematologists prefer routinely to examine aspirated material in the form of histological sections of clots or concentrates of the cellular clumps. Such sections have the advantage of showing certain architectural details, and the amount of fat, but we believe that they fail to reveal finer cytologic details. We prefer to rely chiefly upon carefully prepared films of cellular marrows, but we also make histologic sections of clotting marrow aspirate for additional information. When no cellular material can be aspirated, a specimen must be obtained either with a trephine needle or by surgical biop-

sy. Figures 1 and 2 illustrate various types of marrow preparations and technical problems.

Indications for Bone Marrow Study

Table I summarizes the types of conditions in which marrow cell studies may be helpful in diagnosis. It should be mentioned that, in addition, certain parasites and pathogenic bacteria can be found in films and cultures of marrow and that the value of this type of diagnostic study is often overlooked.

Table I

SITUATIONS IN WHICH MARROW STUDIES MAY BE HELPFUL IN DIAGNOSIS

Most cases of thrombocytopenia.
Obscure leukopenia and, rarely, leukocytosis.
Only a few cases of unexplained anemia.
Occasionally in destructive bone lesions seen by X-ray.
Infrequently in other types of diagnostic problems.

Thrombocytopenia is perhaps the most consistent indication for marrow aspiration. Here the presence of plentiful megakaryocytes may support the diagnosis of idiopathic thrombocytopenic purpura and be of great importance in the choice of therapy. The finding that megakaryocytes are few in number or that they show morphologic evidence of damage may indicate a secondary purpura, for which the treatment and prognosis are very different. Examples of

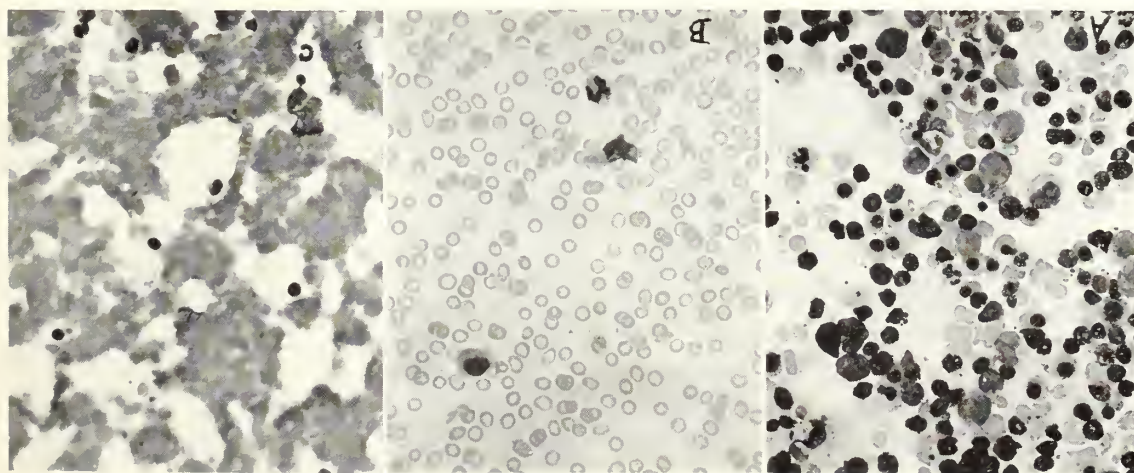


FIGURE 1. (A) Technically satisfactory marrow film; shows some relative increase in red cell precursors. (B) "Marrow" film made up chiefly of blood; unsatisfactory for study. (C) Technically poor marrow preparation; excessive dilution with blood; film thick and overexposed. (X 400)

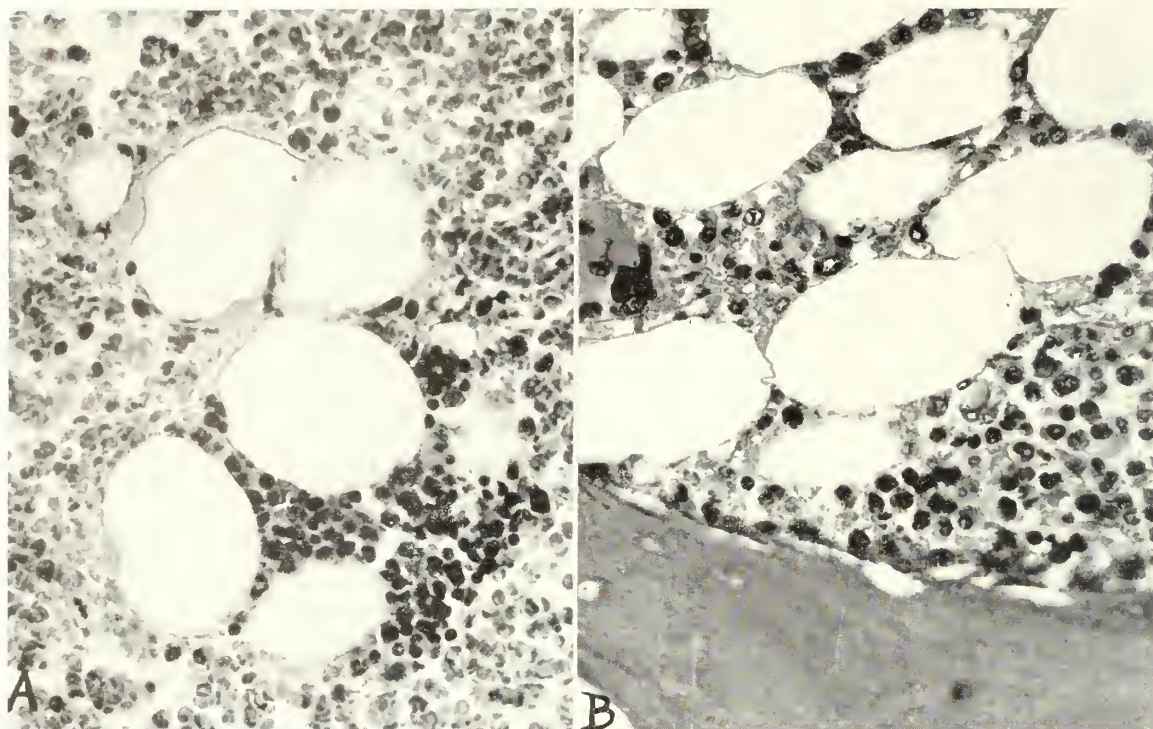


FIGURE 2. (A) Section of clot from aspirated marrow. Small clump of hematopoietic elements and marrow fat cells maintains its architecture suspended in a clot of diluting blood. (B) Bone marrow biopsy specimen. Larger areas of marrow and bony cortex are shown. (X 400)

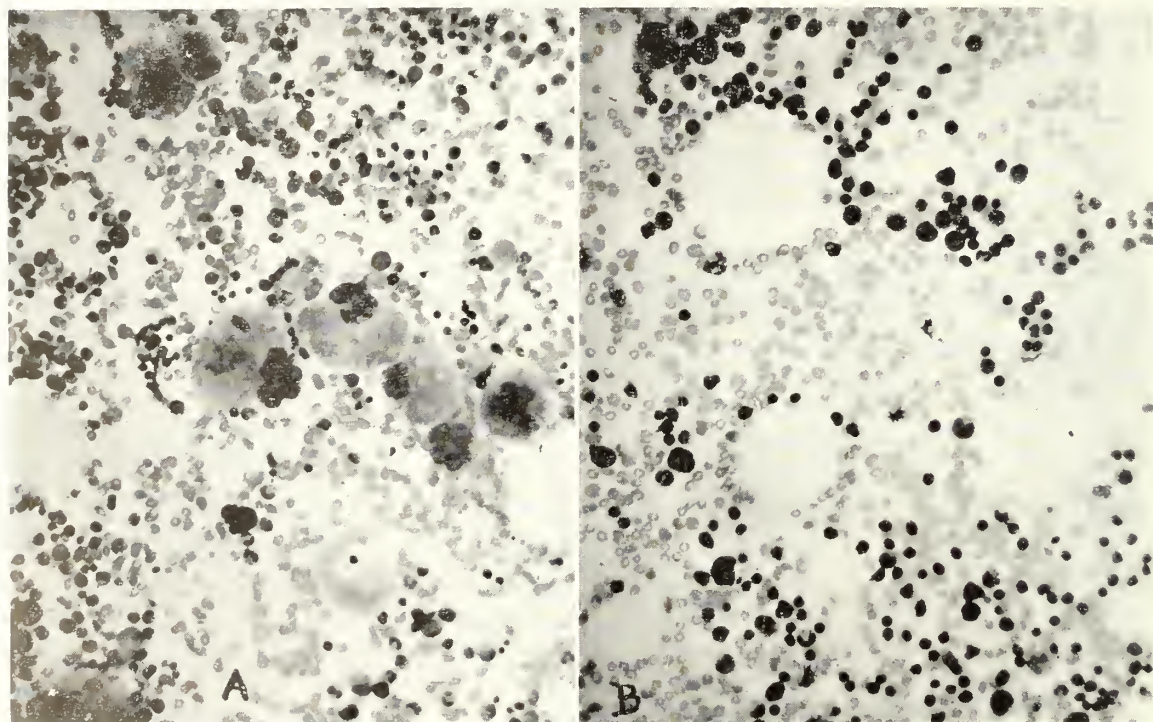


FIGURE 3. (A) Marrow from a patient with thrombocytopenic purpura; shows increased megakaryocytes with apparent lack of platelet formation. (B) Marrow from a patient with similar clinical situation; shows deficiency of megakaryocytes. Diagnosis proved to be hypoplastic anemia. (X 200)

this are shown in Figure 3. Other causes for thrombocytopenia, such as acute leukemia, may be discovered or confirmed by the marrow study.

Marrow study may also shed light on severe and unexplained leucopenia. The finding of plentiful granulocytes with a lack of mature forms, for example, may help to confirm the presence of a hypersplenic syndrome, with a fairly favorable prognosis, while the presence of an aplastic marrow, or one filled with malignant cells of one kind or another may give a very poor prognosis. Acute leukemias with extreme leucopenia may require marrow studies to confirm the diagnosis. Yet it must be admitted that in many of these leukopenic states the peripheral blood study, along with other clinical findings, is enough to indicate the diagnosis.

The value of marrow studies in cases of leukocytosis tends to be exaggerated. In a granulocytic leukocytosis one usually finds just about what he expects to find in the marrow. It is a mistake to believe that the marrow study is definite in confirming or ruling out the presence of an extremely early granulocytic leukemia in such situations.

When there is a pronounced lymphocytosis of unknown cause the marrow study may be more useful.

It is particularly in the diagnosis of the anemias that marrow studies seem to be expected to yield more information than they actually do. If the anemia is not associated with a prominent disturbance in white cells or platelets, the marrow study is likely to be uninformative. The peripheral blood, which lends itself so well to quantitative studies of the size and hemoglobin content of the red cells, is infinitely more important in determining the cause of most cases of anemia.

Destructive bone lesions can sometimes be explained by aspiration studies. The abnormal cells of multiple myeloma present one of the few distinctive marrow pictures from which a definite diagnosis can sometimes be made, without any other related information; but even in this disease the marrow is not always diagnostic. Neoplasms of bone and lesions of other types

may be discovered and it may be helpful to attempt to aspirate specific areas shown by the X-ray to be involved.

Finally, a variety of difficult diagnostic problems involving fever, loss of weight, splenomegaly, and other nonspecific symptoms should be considered. In this group, cytologic marrow studies are now and then very helpful, and when other diagnostic means are exhausted, one is justified in performing the marrow study even when the likelihood of obtaining useful information is not great. Since a culture of marrow is often indicated in such cases, the simultaneous preparation of films for hematologic studies should usually be done. In the various syndromes grouped broadly as lymphoma bone marrow examination is of less value than is commonly believed; occasionally it aids in making the diagnosis. The L.E. cell, which has had so much publicity, can be found in the peripheral blood and so the possibility of lupus erythematosus is no longer a good reason for marrow aspiration, though for several years this was the method used. There are, however, a few added situations in which rather specific and helpful information can be obtained from the marrow.

A quite separate field of usefulness of marrow studies is in the evaluation and planning of certain forms of therapy. In acute leukemia, particularly in the presence of leukopenia, marrow changes are of much help although sometimes one hesitates to subject a patient, particularly a child, to the discomfort of repeated marrow aspirations for the purpose of planning a therapy which at best is only palliative. Marrow changes are often helpful in evaluation of the degree of damage from radiation and radiomimetic drugs.

In attempting to arrive at a general conclusion about the usefulness of bone marrow examinations, one should consider the facts that it is quite safe, requires no expensive equipment and can be done in the physician's office. On the other hand it may cause some significant discomfort to the patient, especially if it is not skillfully performed, and the results may be of no value unless good preparations are made and unless considerable time is given to

their study. The test should not be performed promiscuously, but should be decided upon only after evaluation of the whole clinical situation and usually after a careful study of the peripheral blood.

Except in unusual circumstances, the aspiration should be performed by a physician who (1) believes it is necessary, (2) is able to evaluate the information obtained during the performance of the test and to supervise the technical details of making suitable preparations, and (3) is qualified to interpret the result in the light of the patient's total situation.

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Discussion

R. C. HARTMANN, M.D., (Nashville): I am in complete agreement with the sound principles put forth by Dr. Andrews. The bone marrow examination is but one facet in the study of the clinical problem. The examiner must be able to correlate the results of the marrow aspiration with the clinical picture, accurate blood cell counts, and a well-prepared peripheral blood smear.

Any statistical compilation of the results of marrow aspirations will yield a rather low proportion of so-called "positives" in which an absolute diagnosis can be made on the basis of the marrow alone. A slightly greater proportion will be obtained in which the results are supportive or confirmatory. Yet statistical and retrospective analyses are likely to be of little value in dealing with the problem concerning a specific patient. In such a situation the value of sound "negative" information may be considerable. However, perhaps more than with any other microscopic examination of body tissue, interpolation of a "negative" marrow smear or section to indicate normality of the entire marrow is fraught with danger. This is true because of the frequent "spotty" occurrence of the lesions and variable inadvertent dilution with peripheral blood. The more adequately and carefully the marrow study is performed, the more value can be attributed to a

"negative" examination. Forearmed with the knowledge that the clinical picture suggests the presence of "spotty" lesions, the examiner can then suggest the means toward a more adequate study of the marrow.

Certain trends in the diagnosis of blood dyscrasias that have been particularly influenced by the increased frequency of bone marrow examinations during the past decade can be listed as follows: (1) The diagnosis of more cases of subleukemic leukemia masquerading as aplastic anemia. (2) The recognition that a variety of bone marrow disorders aside from leukemia may be accompanied by some immaturity of the peripheral white blood cells. (3) The unmasking of many cases of alleged chronic myeloid leukemia as belonging truly to the myeloid metaplasia syndrome, an important distinction since prognosis and indicated therapy in these two disorders may be strikingly different. (4) The more frequent detection of multiple myeloma early in the course of the disease and thereby recognition of a changing clinical pattern of this disorder.

On the other hand the most common unnecessary marrow examination is that performed in cases of anemia due to chronic blood loss. The marrow study will add nothing to a careful clinical history and evaluation of the peripheral blood.

Unfortunately, it must be admitted that the vast majority of marrow aspiration smears received in the mail are almost totally inadequate for study. Perhaps the most common error is that too much aspirate is removed leading to excessive dilution with peripheral blood. Only several drops and certainly no more than $\frac{1}{4}$ ml. of marrow should be removed by aspiration. (Parenthetically, for emphasis I might add while we are gathered on this historic site that made the slogan, "Good to the Last Drop" famous, by contrast with marrow aspirate it is "good only to the first few drops.") If more material is desired for culture or other examination a second syringe should be used. When the method of using minimum aspirate fails after one or several attempts, in our experience subsequent surgical biopsy sections usually reveal that such technics as making sections of clotted aspirated marrow would probably have been of little value.

Unfortunately, errors are also frequently made in surgical marrow biopsies. The mere removal of a bit of trephined cortical bone with little or no attached marrow is a worthless procedure. An adequate flap of cortical bone should be laid aside and large amounts of marrow removed. Another common mistake is to perform the biopsy (or aspiration for that matter) in the manubrium or lower third of the sternum, regions in which there is apt to be considerable fat or fibrosis even under physiological conditions.

STAFF CONFERENCE

Le Bonheur and John Gaston Children's Hospital*, Memphis, Tenn.

Acute Nephritis

DR. EMMET BELL: N. G., an 8½ year old girl, was admitted to the Le Bonheur Children's Hospital on June 1, 1954 with the following history given by the referring physician.

The child had been admitted to a local hospital on May 2, 1954 with complaints of fever, malaise, and abdominal pain for several days. The abdominal pain was described as generalized at times and localized in the left mid-abdomen at other times. The mother had noticed some periorbital edema. The only significant feature of the past history was that of multiple allergic difficulties. She was in the process of being desensitized with a number of pollen extracts at the time of the onset of the present illness.

Physical examination at the time of admission to the local hospital revealed a pale, underweight girl with no apparent edema. Aside from mild generalized abdominal tenderness, the examination was entirely negative. Laboratory findings at that time were Hgb. 10.4 Gm., RBC 3,570,000, WBC 13,150, with a normal differential. The urine was dark yellow, specific gravity 1.017, pH 5.0, trace of albumin, sugar negative; microscopic examination disclosed per high power field 6-8 RBC, 4-5 WBC and 6-8 hyaline casts.

The child developed bloody diarrhea shortly after admission to the local hospital and the primary diagnosis was obscure until frank, generalized edema appeared a few days later. At this time the pathologic urinary sediment increased. She was then treated with a low sodium diet, penicillin, and bed rest.

By the 11th hospital day the hemoglobin level had dropped to 7.6 Gm., and blood transfusions were given on three occasions. The referring physician also stated that the child had had trouble with pulmonary edema and had had intermittent elevations of blood pressure up to 140/100. On two occasions single injections of magnesium sulfate were given for hypertension. A penicillin rash developed and antibiotic coverage was changed to Achromycin.

The child was transferred to the Le Bonheur Children's Hospital one month after onset of illness. Examination at this time revealed T 101.8, B.P. 130/104, and weight 48¼ lbs. The patient was pale. There was no apparent periorbital edema. Eyes, ears, nose, and throat were normal on examination. Auscultation of the heart revealed a gallop rhythm but no

murmur. Respirations were short and rapid, but no rales were heard. There was moderate tenderness in the epigastrium. No organs or masses were palpable in the abdomen. There was a suggestion of pitting edema over the lower legs.

Laboratory findings on admission were as follows: Hgb. 9.4 Gm., RBC 3,650,000, WBC 10,000, with a normal differential. The urine showed 137 mg. % protein, 20-40 WBC per high power field, red blood cells too numerous to count, and an occasional granular cast. The NPN was 27 mg. %. The chest roentgenogram showed enlargement of the heart and widening of the superior mediastinum, thought to be due to vascular engorgement. There was evidence of pulmonary edema, and a small pleural effusion was present on the right. The electrocardiogram showed right axis deviation, with some left ventricular preponderance and questionable T wave changes. It was considered an abnormal EKG.

DR. ROBERT JORDAN: When first seen this patient appeared acutely ill, having been sick for more than a month when admitted to the Le Bonheur Children's Hospital.

Pertinent findings included a blood pressure of 130/104, fever, rapid respiratory rate, weak pulse with a rate of 120, gallop rhythm, enlargement of the heart on percussion and X-ray examination, abnormal EKG with right axis deviation, minimal generalized edema, marked tenderness in the liver area, pulmonary edema on X-ray, proteinuria, hematuria and anemia.

Important negative findings were the absence of signs of encephalopathy, absence of oliguria, and the presence of a normal NPN. No focus of infection was found.

Thus, we were confronted with the history, physical and laboratory findings of an acute nephritis with hypertensive cardiac failure, but without azotemia, encephalopathy or anuria. The cardiac failure had been present for an undetermined length of time previous to admission. Pulmonary edema was known to have been present on several occasions during the preceding month. Several blood transfusions were given during this time. An inadequate attempt to lower the pressure had been made. The patient's condition was gradually deteriorating.

Immediate treatment was designed to lower the blood pressure in order to combat cardiac decompensation. There was a

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very favorable response to magnesium sulfate in doses of 0.2 cc. per kilogram of body weight of a 50 per cent solution intramuscularly. It was not considered necessary to digitalize the patient, although this is often advisable when cardiac decompensation in acute nephritis is more severe. Improvement in decompensation from use of magnesium sulfate alone was sufficient to make use of digitalis unnecessary. The cardiac response to normal pressure levels was gratifying.

Dr. R. N. Paul will discuss treatment of cardiac decompensation in acute nephritis.

DR. R. N. PAUL: In this case reduction in blood pressure was the chief factor required for correction of cardiac decompensation. However, it is frequently necessary to digitalize these children, particularly the patient with sudden onset of failure. We use a total digitalizing dose of 33 mg. per kilogram of body weight.

One-fourth or one-half of the total calculated dose may be given initially according to the severity of the symptoms, and this followed every 6 or 8 hours by one-fourth of the calculated dose until the total digitalizing dose has been given. Thus, the child will be digitalized in 18 to 24 hours.

We generally use one of the injectable preparations, since immediate action is desired and, also, these children are frequently unable to tolerate oral administration of the drug. The intramuscular route is satisfactory if a non-edematous area is used for the site of injection. The pulse should be checked at frequent intervals to aid in evaluating effect of the medication and to detect indications for change in dosage.

Usually there is no necessity for giving maintenance doses after digitalization, because when hypertension is controlled cardiac function returns to normal.

Further Course in Hospital

DR. BELL: Initially, the patient's course in the hospital was uneventful after hypertension and cardiac decompensation were controlled. However, on the 14th day the NPN was found to be 63 mg. per cent. The urine at this time showed 30-35 RBC and 5-10 WBC per high power field. On the following day the NPN had risen to 103 mg. per cent. Within a few days white cells became numerous in the urine but there was no febrile response. Catheterized urine culture at this time showed *Pseudomonas aeruginosa*

and an alpha streptococcus of the enterococcus group. Sensitivity studies indicated Erythromycin and Chloromycetin to be agents of choice against these organism. These drugs were prescribed, and Achromycin, which had been given for antibiotic coverage, was discontinued. As the urinary tract infection cleared the NPN fell, and at the time of her discharge from the hospital it was 55 mg. per cent. The following week this value fell to 33 mg. per cent.

DR. JORDAN: The subsequent rise in NPN to high levels with return to normal after eradication of an acute pyelonephritis is an interesting complication. The NPN has remained normal on subsequent hospital admissions, constituting a follow-up period of two months.

Dr. Tuttle has some comments to make on pyelonephritis.

DR. ARLISS TUTTLE: We have occasionally been faced with the problem of deciding whether we were dealing with primary glomerulonephritis with secondary urinary tract infection, or primary pyelonephritis with hematuria as one of the manifestations. One would expect the patient with glomerulonephritis to be susceptible to urinary tract infections, particularly if there is oliguria. Depending upon the degree of oliguria, the patient may not voluntarily empty the bladder for periods of several hours. This stasis of urine affords an excellent opportunity for bacterial growth, which may result in infection of the lower urinary tract or pyelonephritis. We regard sudden appearance of significant pyuria in a case of glomerulonephritis as a serious complication, necessitating urine cultures, antibiotic sensitivity studies, and appropriate antibiotic therapy.

DR. JORDAN: Three months after onset of illness the urine continues to show 30 to 50 RBC per high power field, with 0-2 hyaline casts and an occasional granular cast. A trace of protein persists.

The future of the patient is uncertain. Various estimates are given as to the percentage of patients with acute nephritis who develop chronic nephritis with a fatal outcome. Some estimates range as high as 10 per cent.

It is important to eradicate all foci of infection and to avoid further infections. Last

year, I had a case of acute nephritis in a seven year old girl, the daughter of a doctor. Her acute clinical course subsided, but highly abnormal urinary findings persisted until an abscessed tooth was extracted.

Acute nephritis tends to occur in epidemic proportions because of the presence of "nephritogenic" strains of beta hemolytic streptococci. Other children in contact with cases of nephritis should be watched for respiratory infections and evidences of nephritis. Skin infections, especially common sores or those secondary to chickenpox, are the cause of somewhat more than one-third of cases seen in Memphis. This is particularly true in the summer and early fall.

A patient with acute nephritis should be rechecked periodically for at least a year, in order to detect evidence of chronic nephritis. This should be done even in the absence of positive findings.

Dr. Tuttle will discuss the value of various drugs in lowering the blood pressure.

DR. TUTTLE: Generalized arteriolar spasm is a rather characteristic feature of acute glomerulonephritis. The outstanding clinical manifestations of arteriolar spasm are,—(1) elevation of blood pressure due to increased peripheral resistance and (2) "hypertensive" encephalopathy (headache, vomiting, hyperirritability, somnolence, convulsive seizures, coma) resulting from reduced cerebral blood flow and hypoxia. Cerebral edema is thought to play a role in the production of encephalopathy.

The degree of vasospasm, and therefore the degree of hypertension, varies considerably among patients with glomerulonephritis. Also, it may not be closely related to other clinical and laboratory findings such as edema, oliguria, hematuria and proteinuria. Furthermore, blood pressure in any given case of glomerulonephritis tends to be quite labile, and wide fluctuations may occur over a relatively short period of time. For this reason, close observation with frequent determinations of blood pressure (at least every 4 hours) is imperative if the complications of hypertension, cardiac decompensation and encephalopathy are to be avoided.

A reliable guide which may be used in deciding what therapeutic measures should be employed to alleviate vasospasm is the degree of blood pressure elevation. Elevation of blood pressure may occur without signs of encephalopathy, but in our experience encephalopathy is generally associated with extreme hypertension. We consider a diastolic pressure of 90 mm. of mercury or above, or a systolic pressure of 140 or above, to be potentially dangerous hypertension in the age group in which acute glomerulonephritis is usually encountered. Frequently the excitement and physical exercise associated with hospital admission, or a visit to the doctor's office, will cause hypertension of this degree in a child with glomerulonephritis whose blood pressure will return to normal after a very short period of rest, especially after the procedure of determining blood pressure has become familiar to the patient. Mild sedation with rapidly acting barbiturates tends to allay apprehension and is frequently the only definitive therapy necessary in patients with hypertension of a mild or moderately severe degree.

We feel that more vigorous therapy should be used in any patient displaying signs and symptoms of impending cardiac failure or encephalopathy, even though the blood pressure is only slightly above the potentially dangerous level. Furthermore, persistent hypertension of above 140 systolic or above 90 diastolic after sedation and bed rest is an indication for further treatment aimed at reducing arteriolar spasm. Ordinarily, intramuscular administration of magnesium sulfate in dosages of 0.2 cc. of a 50 per cent solution per kilogram body weight will effectively lower the blood pressure in children with glomerulonephritis. This may be repeated, if necessary, at intervals of four hours, providing the patient does not develop signs of magnesium intoxication (somnolence, bradycardia, hyporeflexia, abdominal distension). If marked oliguria or anuria is present it is advisable to begin with one-half the above recommended dose. Magnesium sulfate may be administered intravenously in the event that rapid reduction in blood pressure is essential. A highly dilute solution

(1%) should be used and should be given very slowly with frequent blood pressure determinations. At the first sign of reduction in blood pressure, the administration should be discontinued. Extreme caution should be exercised in administering magnesium sulfate to patients who are receiving digitalis, since preparations used in the treatment of magnesium intoxication, that is, intravenously injected calcium gluconate or calcium chloride are contraindicated in the digitalized patient, in whom they are likely to precipitate ventricular fibrillation. Measurements of renal hemodynamics before and after magnesium sulfate therapy have revealed no evidence of deleterious effects of magnesium on the diseased kidney. In fact, renal circulation may actually be improved by the drug, probably a result of the vasodilating effect of the magnesium ion.

We have used Apresoline in the management of a number of cases of glomerulonephritis and have found it a very useful drug, particularly when severe complications exist, such as cardiac failure and encephalopathy. The drug may be administered orally or intramuscularly in an initial dose of 0.5 mg. per kilogram body weight. If the response is not adequate, an additional dose of 0.25 mg. per kilogram may be given after 90 minutes. Subsequent doses by either route of administration should not exceed 1 mg. per kilogram, and usually, 0.5 to 0.75 mg. will be effective. The drug may be given at intervals of three to four hours as necessary to control hypertension. We have found that a reduction occurs in the glomerular filtration rate, renal blood flow and urinary output following the use of Apresoline in glomerulonephritis. These alterations appear to be transitory and do not unfavorably influence the course of the disease. We have found Apresoline useful in cases which did not respond to magnesium sulfate therapy.

DR. JORDAN: Dr. Frances Osborn Riley will discuss the management of hypertensive encephalopathy in these cases.

DR. RILEY: This child had no symptoms referable to the central nervous system when seen at the Le Bonheur Children's Hospital and apparently had had none

prior to admission here. The picture of cardiac failure was the predominant one in this case, rather than hypertensive encephalopathy. However, we see many children whose most outstanding complication is encephalopathic in nature.

As Dr. Tuttle has said, these symptoms are thought to be caused by arteriolar constriction in the central nervous system, and to a less extent by cerebral edema. Regardless of the mechanism of their production, we know that the most effective treatment is that directed toward lowering the blood pressure. In the mild case, bed rest and sedation may be all that is necessary. In the more severe case where restlessness, headache, vomiting, and a rising blood pressure indicate that more serious manifestations may ensue, immediate institution of vasodilator drugs is imperative. If convulsions occur a medical emergency exists and rapid treatment is required. Intravenous injection of barbiturates, or even brief general anesthesia if necessary, may control convulsions. Supportive oxygen therapy may be helpful. Then measures should be started to lower the blood pressure as quickly as possible. This is certainly an indication for intravenously administered magnesium sulfate. It can be given safely in a 1 per cent solution at a rate not to exceed 2-3 cc. per min., with an assistant checking the blood pressure continuously in the other arm. The total injection should probably not exceed 200 cc. The level of blood pressure attained when the infusion is stopped should be slightly above the expected normal in order to allow for any further lowering which may occur. It is remarkable to see the rapid disappearance of convulsions when hypertension is reduced. In general, it is impossible to control convulsions for any length of time with anticonvulsants unless the blood pressure is lowered. Therefore, careful observation and frequent blood pressure is lowered. Therefore, careful observation and frequent blood pressure readings are necessary in order to prevent subsequent rises and reappearance of convulsions.

Calcium salt should be available for intravenous injection in case over-depression

with magnesium should occur. If the child has been digitalized, intravenously injected calcium is extremely hazardous and may cause cardiac arrest. Therefore, every caution should be exercised in using magnesium by the intravenous route in the digitalized patient to avoid over-depression that would necessitate this treatment.

Recovery is usually complete, although a confused state and abnormal neurologic findings may exist for several days. If convulsions are allowed to continue without treatment, however, permanent brain damage may result from anoxia. Therefore, it

is imperative that this important complication be prevented if possible or treated vigorously when it occurs.

DR. JORDAN: In summary, we have presented a patient in whom acute nephritis produced cardiac decompensation and in whom acute pyelonephritis was a complicating feature. Methods of management of certain important aspects of acute nephritis were discussed, particularly control of hypertension, management of cardiac failure, and treatment of hypertensive encephalopathy. This concludes today's conference.

The Results of Mitral Valvulotomy for Mitral Stenosis. Gibbon, J. H., Jr., Allbritten, F. F., Jr., Templeton, J. Y., III, Finley, R. K., Jr., Amadeo, J. H. and Lewis, D. W. *Ann. Surg.* 139:786, 1954.

The authors report the results of operations on the mitral valve in 95 consecutive patients treated at the Jefferson Hospital in Philadelphia. Selection of patients for operation was based on combined clinical electrocardiographic and radiologic evidence of mitral stenosis. No asymptomatic patients were submitted to operation. Diagnostic errors were made in 12 patients, one of whom was found at operation to have no evident valvular disease, while 11 others had mitral regurgitation with no accompanying stenosis. Among 83 patients who proved to have stenosis of the mitral valve, 50 had pure mitral stenosis, 29 had mitral stenosis and regurgitation and 4 had mitral and aortic stenosis. The finger fracture method of commissurotomy without resort to the knife was used at operation in all but a few instances where dense fibrosis of the valve demanded the use of a cutting instrument.

There were 11 operative deaths in 95 patients, an operative mortality rate of 11.5 per cent. Four

of these deaths were due to technical errors at operation and 4 others resulted from ventricular fibrillation or cardiac standstill. One patient died after operation from progressive cardiac failure, another from cerebral embolism, and a third from an extensive thrombosis of the right pulmonary artery.

The postoperative course of the majority of patients who survived operation was uneventful and complications were relatively minimal. Functional follow-up results in 55 patients with mitral stenosis who were followed for 6 months to 4 years postoperatively, were graded according to their capacity for effort before and after operation using the functional classification of the American Heart Association. Forty-three patients had an excellent result, eight had a good result, two were unchanged by operation, one was worse following operation and there was one late death. The authors feel that the good results obtained in their Class IV patients who survived operation warrant the continued use of valvulotomy in these terminal cases despite the increased operative risk. (Abstracted for the Middle Tennessee Heart Association by H. William Scott, Jr., M.D., Nashville.)

CLINICOPATHOLOGIC CONFERENCE

Baptist Memorial Hospital, Memphis, Tenn.

Rabies

J. R. G., a 4 year old white boy was admitted on May 31, 1951, because of fever, restlessness, and clouding of consciousness.

Twelve days before admission, he suddenly awoke from a nap screaming with a frontal headache. The headache stopped in 48 hours when coincidental constipation was relieved. Soon after the onset, fever appeared which continued, and at times was as high as 106 degrees and over. He vomited once 48 hours after the onset, and during the 48 hours before admission he gagged a great deal and vomited a few times. It was noted that there was some difficulty in swallowing, particularly of cold liquids.

Off and on he had a great deal of cloudiness of the sensorium. This became worse and almost continuous during the week before admission. He talked at random at times, was restless, and appeared to have slight convulsions, fretted and screamed, and seemed to have headaches.

On the day the disease started the father painted the interior of the oven and lit it in a closed room. Intense fumes filled the room for 30 minutes, and the father and the child were in the room during this time. The mother developed a "splitting" headache, and the child became ill later on that day. The patient was known to be allergic to several foods which sometimes caused vomiting.

Before coming to Baptist Memorial Hospital, the patient was hospitalized in Greenwood, Mississippi. There, the urinalysis was negative. Repeated blood counts showed a normal RBC and Hgb. WBC's were 13,000, 21,000, and 15,500 at different times with a moderate increase in segmented neutrophils. Stools were negative on microscopic examination and cultures. Routine agglutinations, including the heterophile, were negative. Spinal fluid was clear, with 14 lymphocytes; the protein was 35 mg. % and chlorides 735 mg. percent. Blood culture was negative. Fasting blood sugar 107 mg. and serum calcium 10.2 mg. percent. X-rays of the chest and skull were said to have been negative. During this hospitalization, he received penicillin and Aureomycin without benefit.

On physical examination at the Baptist Memorial Hospital the patient was disorientated, restless, well-nourished, and slightly dehydrated. The neck did not seem stiff. The rest of the physical examination was negative.

Urinalysis was negative, RBC and Hgb. were normal. WBC was 14,350 with 82% segmented neutrophils and 4% bands. Stippled RBC were sought, but none were found. The spinal fluid

was clear. Pressure was not obtained because the patient was struggling. There were 60 WBC of which 32 were polys and 28 lymphs. Protein was 124 mg. %, sugar 77 mg. % and STS was negative. A blood culture was negative. X-ray study of the wrists and knees showed no evidence of lead poisoning or metabolic disease.

Course

On the day after admission a neurosurgical consultant found the patient to be unresponsive to anything except painful stimuli. The neck was slightly stiff. The head was normal and there was no "cracked pot" sound. The fundi showed engorgement of the veins and a glistening appearance of the retina suggestive of edema. Pupils were moderately dilated and did not react to light. The corneal reflexes were absent. No other reflexes were absent; the abdominal reflexes present. There were no pathological reflexes.

The patient continued to grow worse. The temperature ranged from 101 to 104. He would not swallow and there was considerable accumulation of saliva and mucus in the throat. He was restless, became comatose, developed irregular respirations and died on June 2, the third hospital day.

Discussion

DR. CLIFTON W. WOOLLEY: This four year old child presented himself because of a severe headache. This was of sudden onset. The symptoms which followed point to the central nervous system. I noted these abnormal findings: severe frontal headache, fever, vomiting, difficulty in swallowing (particularly of liquids), cloudy sensorium, extreme restlessness, and slight convulsive seizures.

On the negative side of the picture, I noticed that nothing was mentioned about cyanosis, jaundice, petechiae, rash, diarrhea, cough, or chest findings, and no masses were found. This would tend to rule out disease of the respiratory system, circulatory system, and gastro-intestinal system. The exanthemata or diseases which produce rashes or petechiae, apparently are not a part of this picture.

Now, thinking of the central nervous system we shall try to pin this thing down to that part of the nervous system which is involved, and as we go along with some of the things we think this could be we shall bring these out.

There was a leukocytosis of from 13,000 to 21,000 with a moderate increase in the neutrophils while in the hospital in Greenwood,

Mississippi. The white cell count was 13,350 in this hospital, with about 82% polymorphonuclears and 4% bands. This would tend to rule out the encephalitides of viral origin. In most of such cases there is leukopenia, and the cells are mostly in the monocyte or lymphocyte series.

On the negative side of the picture in laboratory findings were two negative urines. The urinary system therefore was probably not involved. The stools were negative by microscopic examination and by culture. The routine and heterophile agglutinations were negative, but this was early in the disease. This does not rule out the Rickettsia, since the agglutinations usually become positive later in the disease. The rickettsial diseases are more benign and insidious in onset compared with this disease.

The spinal fluid examination, done in Greenwood, Mississippi, showed 15 cells, all lymphocytes. This would indicate some irritation to the central nervous system, probably an encephalitis producing an increase in cells. On the other hand, the chemistry was normal.

After the child reached this hospital, the symptoms described continued with extreme restlessness, disorientation, and slight dehydration. The remainder of the physical examination was noted as negative. In my mind that statement is of much importance, pointing further to a lesion of the central nervous system.

The child was well-nourished, and there was no enlargement of organs or of the glands. In this hospital no stippling of the red blood cells was found. This would be against toxic conditions, as found in poisonings of various sorts. The spinal fluid picture changed. Here, we have 60 cells in the spinal fluid, — 32 are polymorphonuclears, 28 are lymphocytes. The protein has risen from 35 mg. to 124 mg. which is definitely increased. X-rays of the wrist and knees were negative. To me this is important, because it rules out lead poisoning, which we have seen frequently in this locality, particularly at the John Gaston Hospital.

In the neurosurgical consultation, the neck was found to be slightly stiff, the deep reflexes were absent, and the corneal re-

flexes were absent. The pupils were dilated and failed to react to light. The eye grounds were suggestive of edema, but I do not take this to mean papilledema. There was no cracked pot sound. This is against the diagnosis of hydrocephalus. No pathological reflexes were present, which is against the diagnosis of meningidities. With irritation of the meninges we would expect a positive Brudzinski and a positive Kernig's sign.

There are similarities in this case to the rickettsial diseases which include Rocky Mountain spotted fever, typhus fever, Q fever and several others. Severe headache, irritability, delirium, coma, mental disturbances, and convulsions are all found in this case, although the convulsions may be a little more severe in these diseases than in this case. Against the diagnosis of rickettsial disease is the absence of a rash. The agglutinations were negative, although they were done early. Splenomegaly usually found in these diseases is absent.

We must consider septicemia as a fulminating febrile disease involving the brain, but two blood cultures were negative. Also, he was treated with penicillin and Aureomycin in Greenwood. If these were given in adequate doses I believe that such disease would have been brought under control at least to some extent.

One of the first conditions we considered was poisoning, but there was no stippling of the red cells. There were no lead lines in the bones of the knees or the wrist. Almost invariably we find these in lead poisoning including lead encephalopathy. Their absence here rather conclusively rules out lead encephalopathy. The convulsions mentioned here do not resemble those of lead poisoning. Those of us who have seen lead encephalopathy know that once a child begins to convulse, without energetic suppression with appropriate medications, those convulsions will continue. They are not minimal as in this case.

We must consider brain tumors in childhood. The most common tumors in childhood occur in the cerebellum or posterior fossa. Tumors in the posterior fossa rarely if ever cause convulsions. One tumor that could have produced these symptoms is a medulloblastoma with a spread of the tumor

throughout the brain and meninges. We would expect, however, to find some pathological reflexes which were not present here. Another thing against the medulloblastoma is that almost invariably at this state of the disease papilledema is marked which was not found here. I do not think that this was a medulloblastoma or any other tumor of the cerebellum. With brain abscess papilledema is usually present, but it was absent here as were focal signs and pathologic reflexes. In brain abscess there is rarely any difficulty in swallowing. With tumors or abscess, we rarely have findings in the spinal fluid unless the process involves the subarchnoid space.

Tetanus must be considered but such patients have a clear sensorium, although they do have difficulty in swallowing, and pooling of mucus in the throat. Clouding of the sensorium would tend to rule out this diagnosis. Trismus and tetanic convulsions absent in this case usually are present in tetanus.

There are some things here that resemble poliomyelitis. The cerebro-spinal fluid findings could be compatible with polio. In polio, we do not expect convulsions. The deep reflexes were lost and one should expect to find some focal paralysis.

All the positive findings of an encephalitis are present in this case except for the difficulty in swallowing. I do not remember seeing encephalitis with so much trouble of this nature. Most of the viral encephalitides have a leukopenia, and this child definitely had a leukocytosis. Paralysis may or may not occur in encephalitis. The fact is that there are no laboratory findings available to confirm the diagnosis of encephalitis.

My diagnosis in this case does fall in the encephalitis category. If it involved the meninges, as I said before, we would have some positive signs. If it were in the cerebral cortex, we would expect some spastic paralysis. Also, if it were primarily in the basal ganglia, we would expect some rigidity which we did not have here. This narrows it down to the last possibility, that of rabies, which is my diagnosis in this case. Rabies is an encephalitis characterized by difficulty in swallowing. In some cases there is no history of dog bite. There is

one other possibility, a death from vaccination for rabies. Such deaths have occurred, and they are most frequently confused with rabies. There was no history of such vaccination in this case.

DR. S. F. STRAIN: I think there is no question, but that the child died of an encephalitis. The entire clinical picture can readily fit the diagnosis of lead encephalopathy. I realize there are no lead lines in the bones, but that finding occurs only in chronic lead absorption, after lead has been absorbed over a period of time. Stippling of the red blood cells, of course, is very common in chronic lead poison, but I think this was acute poisoning. The inhalation of lead is much more dangerous than the absorption from the gastro-intestinal tract, because lead taken in the gastro-intestinal tract is absorbed through the portal system and into the liver, and a certain amount of detoxification takes place in the liver. When, however, it is taken directly into the lungs, it is absorbed directly into the blood stream, without having had the benefit of passing through the liver. I think one would not expect, in acute lead poisoning, lead lines in the bones.

I believe the entire picture can well fit into the picture of lead encephalopathy. I do not believe it is a virus encephalitis nor do I believe it is bacterial in origin.

DR. RICHARD DESAUSSURE: I agree that lead encephalopathy is a good possibility in this case, and as Dr. Strain pointed out, I think it is too early to get the lead lines, or basophilic stippling of blood cells. There have been several cases of lead encephalopathy caused by battery casings being burned for fuel. I would like to mention one thing and that is the description of the eye grounds. The engorgement of the veins means early papilledema. I don't think that a brain tumor has been completely ruled out. It could be in the frontal lobe or the right temporal lobe, which are so called silent areas, and might not give localizing signs. Dr. Woolley is certainly right that the cerebellar involvement does not cause convulsions. There are descriptions in the literature of cerebellar convulsions, cerebellar fits, but this is really decerebrate rigidity and is not a true convul-

sion. The fact that the deep reflexes were out has no great significance except that this may indicate that there was marked swelling of the brain. Marked intracranial pressure may compress the brain stem and depress the reflexes. There can be convulsions, which you might call focal convulsions coming from the cortex. We have seen several individuals with tumors of the cortex who had convulsions in just one finger or in the foot without a spread of convulsions, so I don't think that the fact that these were light convulsions rules out a tumor of the cortex. I am inclined to agree with Dr. Strain's diagnosis of lead encephalopathy.

DR. C. V. CROSSWELL: Almost every possibility has been mentioned by the previous speakers except cerebral hemorrhage. The spinal fluid did not show much blood, but the protein was increased more than one would expect to find with the number of pus cells present.

Poliomyelitis might also be considered a possibility as there was some disturbance in his respiration and difficulty in swallowing, but the temperature did not fit that of a bulbar type of polio, rather the high temperature seemed to be terminal.

My experience with rabies is that of severe convulsions instead of slight convulsions as suggested in this history. Usually these children have very hard convulsions when offered fluids.

DR. OTIS WARR: I want to get up not to support the diagnosis of lead encephalopathy which I think has been well supported, but to knock the diagnosis of rabies. I haven't had a very broad experience with rabies having seen only one patient die from the disease, but it did make me read a little. I am aware of the fact that since this patient was a male he may have gone out like little boys do, and gotten bitten without reporting it to his parents. In rabies, however, almost invariably there is a history of a dog or cat bite. Another point that I want to bring out is that in spite of the fact that this patient had trouble in swallowing which is a prominent symptom of hydrophobia, he had a cloudy consciousness. Patients with rabies are very alert. They know they are critically ill. I remember

that the patient whom I saw, even though he had a high fever and was critically ill, could give a good history of the bite, his antirabies treatment, and things leading up to the first symptoms of his disease. He knew when his seizures were coming on; even the slightest jar would throw him into seizures. Another thing I want to mention that is against rabies is that this patient lived too long. A patient sick with rabies will usually die within from three to five days; this patient lived two weeks.

DR. JAMES HUGHES: My initial impression was that this child probably had lead poisoning. I thought, as Dr. DeSausure and Dr. Strain, that the paint that had been used was lead-containing and that the child had inhaled lead fumes. We obtained roentgenograms of the long bones immediately but they were negative. Of 25 cases of acute lead poisoning seen at the John Gaston Children's Hospital I have not yet seen one that did not have lead lines in the long bones. Despite the absence of lead lines in the long bones in the present case, I considered that there was still a possibility that lead poisoning was present. Dr. Dempsey Morrison was kind enough to determine qualitative urinary lead excretion. The lead content of the urine was normal. Furthermore, this child did not have the uncontrollable convulsions which have been present in all cases of lead poisoning with acute onset that we have seen from the inhalation of lead fumes. We thus ruled out lead encephalopathy.

Poliomyelitis was the next thought. However, the illness had appeared very abruptly for polio. You will recall that the temperature was 105 or 106. That can occur with polio but it seemed a little out of line. Also, this child had a remarkably clouded sensorium; in fact, he was never alert during his hospitalization. Polio rarely strikes so fast, although there is an encephalitic form which simulates the condition this child had. Also, the white blood count of 21,000 was high for polio but would be normal for rabies. The marked difficulty in swallowing, the bulbar symptomatology in respiration, could exist in polio, but would be exceptional. So we felt that we were dealing with an encephalitis of some type.

The thing that attracted my attention to rabies was the great difficulty in swallowing that developed on the final day. That was when I really began to think of rabies. It was not as marked as the protocol suggested until the day the child died. So, when the child died, we had disproved lead poisoning, and we did not think he had had polio. I telephoned the pathologist and suggested that he search for rabies.

I should like to dispute one statement that has been made, that rabies patients die within five days after onset of symptoms. The majority of them do, but there have been instances of longer survival than that. This child was sick 12 days before admission and lived here 2 more days, 14 days in all after onset of symptoms. Patients with rabies have survived even longer than that, and I believe that the longest after symptomatology has developed has been about four weeks. I also disagree that all rabies patients exhibit maniacal behavior. Some show predominately lethargic and paralytic phenomena; this child would fall in this category.

For anyone who would like to read on rabies there is an excellent chapter by Harold N. Johnson in *Viral and Rickettsial Diseases of Man* by Thomas M. Rivers.

We tried to elicit a history of a dog bite, but there was no evidence of the child's having been bitten by a dog or having come into contact with any ill animal. There were no lacerations noted by the parents.

DR. GEORGE BALE: At autopsy, there were no scars or breaks of the skin agreeing

with clinical findings. The brain was slightly edematous but did not show any marked flattening of the convolutions. There was some slight injection of the blood vessels.

The lungs microscopically showed a broncho-pneumonia. Sections of the brain showed damage throughout the brain. The brain stem showed marked changes, commonly taking the brunt of the damage. In the first slide (Fig. 1) you see a small nodule around a blood vessel and considerable infiltration of lymphocytes. Probably a few of these round cells are microglia. Here you see ganglion cells which show all kinds of degeneration up to necrobiosis. The next slide (Fig. 2) shows an area through

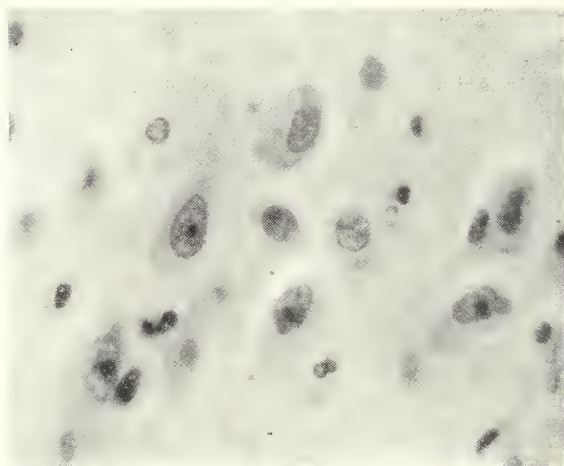


FIG. 2. Hippocampus showing Negri bodies in ganglion cells. (B.M.H. A-51-116) (x970).

the hippocampus in which you can see a few of the ganglion cells from this region. Here one sees at least six Negri bodies. Some of them are noted in the characteristic position in the cell, that is between the nucleus and the dendritic end of the cell. The large body is in a necrobiotic cell and hence seems extracellular. This one shows a few faint bluish dots suggestive of an internal structure.

I certainly second the vote on the excellence of Dr. River's book. I would like to say something about the incubation period of rabies. I had been taught and there is apparently a general accepted theory that the incubation period is directly proportionate to the distance of the inflicted wound from the brain. It has been observed clinically that those individuals who have

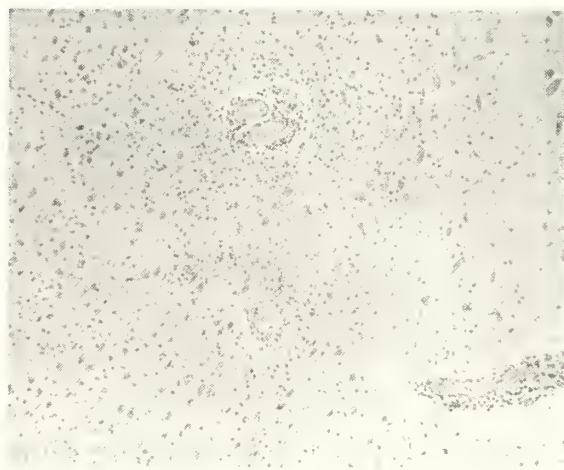


FIG. 1. Basal ganglia showing inflammation and degeneration. (B.M.H. A-51-116) (x100).

wounds on their feet have a longer incubation period than those with wounds on the face and hands. However, the reason for that is apparently not because the virus has to travel further to the brain, since experimental animals inoculated intracerebrally may have an incubation period of as long as 90 days. It has been suggested that, perhaps, the short incubation period found in individuals bitten about the face and hands might possibly be due to the fact that the wounds in these regions have a tendency to be deeper and more widely spread. Also, since the musculature of the face and hands is more superficial, the inoculation can get into these structures more easily. To explain this variation in the incubation period it has been postulated that the virus must be arrested somewhere along the line of development, either at the site of inoculation or somewhere in the nervous system to produce the variation of incubation periods commonly seen.

Another factor which interests me is the attack rate of rabies. I had always felt that if a person were bitten, or even nipped

by a rabid dog the chances of that person contracting rabies was extremely high. Observations quoted in River's book do not bear that out. The subcutaneous inoculation of the experimental animals, outside the masseter muscle or the brain, produces rabies in only 50 per cent of the animals in spite of larger doses. It is further stated that the estimated attack rate before the advent of vaccine therapy in 1885 was only 9 per cent. There are two reports from the more recent literature about untreated persons exposed to rabid animals. Out of one group of eight persons, all of whom were bitten approximately equally, only four developed rabies. In another group nine out of 12 developed rabies.

The local treatment of these contaminated wounds, if done within a period of two hours, apparently has been proved efficacious. Ekstrom in 1830 started cauterizing these wounds with hydrochloric acid. He was able to show a marked decrease in the development of rabies in people so treated. In experimental animals washing the wounds with soap and water inactivates the virus, if done within two hours.

The Use of Hypothermia in the Prevention of Paraplegia Following Temporary Aortic Occlusion: Experimental Observation. Pontius, R. G., Brockman, H. L., Hardy, E. G., Cooley, D. A., and DeBakey, M. E. Surgery, 36:33, 1954.

Induced hypothermia has been used clinically during recent years chiefly as an adjunct during operations for congenital heart lesions and its greatest clinical advantages has been realized in the surgical treatment of the extremely ill children with congenital lesions of the "cyanotic" type such as the tetralogy of Fallot and, most recently, the septal defects. The experimental study reported in this paper is concerned with the effect of the reduced oxygen needs of the central nervous system under hypothermia when it becomes necessary to occlude the thoracic aorta for the treatment of lesions such as aneurysms of the descending thoracic aorta. Temporary occlusion of the thoracic aorta under conditions of normal temperature is often accompanied by paraplegia and death.

The experiments were carried out under general anesthesia and in all the aorta was occluded just distal to the left subclavian artery and in

some further diminution in the distal blood flow was effected by division of intercostal arteries.

There was not a significant difference in the mortality rates in the experiments performed under induced hypothermia and in the control experiments performed under normal temperature conditions. However, among the larger groups of animals which survived, there was a striking difference in the incidence of neurological changes. Paraplegia was present in 65 per cent of the survivors in the control group in which the operative procedures were carried out under normal temperature conditions whereas no neurological disturbances were noted among the surviving hypothermia animals.

The study may be of considerable clinical importance not only as regards its application to the surgical therapy of aortic aneurysm but also by adding to our meager knowledge of the effects of induced hypothermia upon particular organs and tissues which are temporarily subjected to marked reduction or deprivation of blood flow. (Abstracted for the Middle Tennessee Heart Association by Rollin A. Daniel, Jr., M.D., Nashville.)

President's Letter



DR. THOMPSON

Recently a set of facts and figures have come to our attention. The controversy between the governing body of the City of Nashville and Vanderbilt University, with the present rather hazardous position of the Vanderbilt Medical School, has only accentuated these figures.

I am referring to the American Medical Education Foundation. Most of us have heard many pleas for contributions to this fund. Most have pitched the letters over to be answered later, only to be forgotten, or filed it in the circular file immediately.

Tennessee physicians have been rather slow to contribute. The records, as presented in the recent report of "Directory of Contributors to Medical Education in the United States in 1953," reveals that only 34 physicians contributed \$896.70 directly to the Foundation. This out of a total of 18,176 who contributed \$1,089,962.93. In addition, 260 physicians contributed \$5,488.00 directly to the medical schools. This later out of a total of 29,132 contributors who gave \$1,369,137.72. From this fund each of the three medical schools in Tennessee received over \$20,000.00. This represents an excellent return on our investment.

The American Medical Education Foundation was founded and has been sponsored by the American Medical Association which has contributed \$500,000.00 annually to the fund so that all money raised could be divided out to the nation's 79 medical schools without encumbrance.

One of the main objectives for the initiation of such a group was the threat of Federal subsidy. Because of the urgent need for funds by medical schools throughout the country, Congress seriously considered a

bill which would provide these funds at government expense. From this subsidization by the Federal government it is but a short step to Federal control of medical education. This we believe to be detrimental to the future of American medicine and to the American public which will buy this medical service. To overcome the distressing situation existing within our medical schools this Foundation was formed. It was felt that if about ten million dollars could be raised over a period of years, the needs would be eased sufficiently so that there would be no need for Federal subsidy.

Tennessee doctors have been rather backward in their giving as the above figures indicate. This is a very important fund and its full support is mandatory. Medical education is at the crossroads. The need is great. Contributed funds can be earmarked by the giver for whatever medical school he wishes.

Contributions to this fund offer an excellent opportunity for the physicians of Tennessee to do their share in insuring the maintenance of high standards in the medical schools of the United States. This is a national problem, for the 79 medical schools in 56 cities are charged with the responsibility of turning out an estimated 6,000 physicians annually. These 6,000 new physicians must remain free from the influence of federal subsidy. A free medicine is a free people.

It is clearly our job to see that the medical schools can maintain and improve the standards that have been set up for them. This is the challenge which now faces the medical profession. The profession of Tennessee must do its part.

A handwritten signature in dark ink, appearing to read "J. Thompson".

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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R. H. KAMPMEIER, M.D., Editor and Secretary
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SEPTEMBER, 1954

EDITORIAL

THE PROBLEMS OF CHRONIC DISEASE

Physicians in their everyday practice care for patients with chronic illness and thereby are faced with questions and problems which they find it difficult to answer. The doctor recognizes soon that more often than not, the social and economic aspects of chronic disease are more harassing than the medical or scientific. The latter may be quite clearly defined, but his answers to the patient or his family concerning the former are often most difficult and not infrequently the questions are insoluble.

Much of the problem in chronic illness facing the doctor is "science made." The antibiotics have preserved for us many who would have succumbed to pneumonia in other days, but who now fall into those with chronic disease,—the aged and the cardiac patients, those with a variety of chronic pulmonary diseases, and the debilitated. The more scientific management of the patient having myocardial infarction or congestive failure prolongs life as a cardiac cripple. The advances in surgery have permitted the extension of life, in the aged

and in those suffering from malignancy, in a state of chronic illness.

There is no quarrel with these facts, but they must be faced. The doctor by training and human instinct must use every weapon in his power against disease. But he must also face the results in terms of the social and economic implications of extending the life of the aged and infirm. What is the impact of such a person on the family which must provide a roof over his head and who must buy the food, the medicine, medical attention and hospitalization?

Dr. Parran has reviewed this problem.* He points out that the Commission on Chronic Illness was an outgrowth of a committee to study the problem with representatives of the A.M.A., American Hospital Association, American Public Health Association and American Public Welfare Association. Several annual conferences have been held.

Though it may seem obvious, it may be well to quote the accepted definition of chronic illness accepted at one Conference. Such disease has impairments with one or more of the following characteristics:

- Are permanent.
- Leave residual disability.
- Are caused by nonreversible pathological alteration.
- Require special training of the patient for rehabilitation.
- May be expected to require a long period of supervision, observation or care.

Parran develops the changes in the activities in public health. It began with sanitation, control of epidemics of communicable disease by epidemiology, quarantine, immunization, treatment and public health nursing. Now it is developing into a social science based on a knowledge of medical and health sciences.

It is estimated that there are at present 5,300,000 persons (bedridden or ambulant) who fall into the category of those suffering from chronic disease. It is further estimated that 4,000,000 or almost 80 per cent are not in an institution.

The financial angle of chronic illness is

*Parran, T.: New Paths to a Growing Problem. Contributions of Public Health to the Control of Chronic Disease. New England J. Med. 251:287, 1954.

a key one. Parran says, "It is a truism that chronic illness and poverty tend to become synonymous, sooner or later" and goes on to show how thousands of families come to the point of destitution through long illness. In 1952, he says, 500,000 families had medical expenses greater than total family income and that another 500,000 families spent more than half their income on medical care.

The problems which face us as doctors and citizens need much research and thought, according to Parran, before the answers become apparent. Some of the areas needing study stand out clearly if modern medical science is to provide adequate care.

The chronically ill person commonly has multiple complaints or disabilities. Can these be met more economically and better on a clinic basis for the ambulant patient than visiting offices here and there?

The cost and care in the modern hospital is geared to acute illness. Therefore, what of institutional care,—should there be hospitals or nursing homes for the chronically ill?

The cost of chronic illness is burdensome. How is it to be financed? Can voluntary health insurance be extended by some means to include outpatient or home care? Can workmen's compensation, union welfare funds and like sources contribute to these costs? Finally there will be the medically indigent for whom the taxpayer must provide.

More will need be done in the field of rehabilitation, not only for economic self-support but also for self-care to relieve other members of the family of this labor.

Much will need be learned of the value of extending visiting nurse service and allied activities.

Of equal or even greater importance is research to learn what happens to a family unit economically and psychologically when it is burdened with one who is chronically ill.

We as doctors know from daily experience that enormous problems attend the care of the patient with chronic disease. As individuals we can not provide the answers. But the leaders of the profession will need

to join their knowledge with that of the hospital administrator, nurse, businessman and governmental representative in finding the answer to an ever increasing problem.

R. H. K.



STATE MEDICAL ASSOCIATION MAY SET THE PATTERN FOR THE U. S.

The State Association through its Medical Foundation and Committee on Medical Care has established its first medical facility to provide medical care for a needy community.

Two years ago the Council on Medical Service and the Council on Industrial Health of the A.M.A. called a meeting of representatives of the medical societies of West Virginia, Virginia, Kentucky, Pennsylvania and Tennessee. They were to hear of the poor medical care existent in the coal mining areas of these states as found by survey teams of representatives of the A.M.A. and of medical administrators of the U.M.W.A.

The Tennessee State Medical Association was the only society which accepted the challenge. Its U.M.W.A. Liaison Committee and later its Committee on Medical Care of the Tennessee Medical Foundation took on a problem which organized medicine in this country had dodged heretofore. It was this fact, that organized medicine for the first time was assuming any constructive approach to the problems of medical care, that prompted the Commonwealth Fund to act favorably in granting us funds for the necessary studies and planning. You have read from time to time in the Journal of the activities of your committees in this project. Dr. Ben Overholt, chairman, was able to report at the second Charleston Conference last year clearcut planning by a state medical society. Next month he will be able to report a fait accompli,—a historical fact.

After a year's activity by the Committee on Medical Care and its field secretary, Mr. Clifford Seeber, good medicine arrived in the Clear Fork Valley of East Tennessee on August 15. On that day Dr. David C. Meek, (U. T., 1953) opened the clinic which had been remodeled and equipped in the

preceding months under the direction of Mr. Seeber. Dr. Meek is under contract and responsible to the Tennessee Medical Foundation,—thus actually to the State Medical Association.

A dentist, Dr. Charles Cross, of Oak Ridge, has a dental clinic in the Valley. Knoxville specialists will visit the Valley as consultants to Dr. Meek at specified intervals.

Another project is nearing fruition. Members of the Committee advised with the Morgan County Court and as a result it has built a clinic and is equipping it. The Medical Foundation has found the doctor for this town which had suffered from substandard medical care. Several other areas are under study and planning for them is under way.

The Tennessee State Medical Association thus becomes the first branch of organized medicine to take the initiative in a constructive attack upon a sore spot in our medical economy,—deficient or no medical care in needy areas. This may well set a pattern for the Country. The variations will be fitted to the social and economic needs of the individual areas.

Be proud to be a member of a progressive Association. And as you think over income tax deductions, remember that your Tennessee Medical Foundation needs capital for its revolving fund.

R. H. K.



Rh TYPING

Herewith congratulations to the Commissioner of Public Health! The Tennessee Department of Public Health is one of which the medical profession has been proud for a long time, and to which it is indebted for much help in its practice of medicine. Now it again shows its desire to be of aid.

The Rh typing on blood submitted for premarital serologic testing will provide valuable knowledge to the couple and to the doctor. Here is a tool most helpful in preventive medicine.

The presence of Rh negativity should warn both the woman and the doctor against transfusions with Rh positive blood, if needed, even before pregnancies. If the Rh neg-

ative woman is married to an Rh positive man she should be watched carefully through the pregnancy, particularly in any following the first one.

Sensitivity studies in the Rh negative woman during pregnancy, available in the Central Laboratory of the Department of Public Health, will be most helpful in anticipating the possibilities of icterus neonatorum and erythroblastosis fetalis in the offspring.

R. H. K.

DEATHS

Dr. William Caldwell Bilbro, aged 60, died August 20, 1954, at Vanderbilt Hospital in Nashville. He was formerly medical director of the Red Cross Blood Center. His death was attributed to a heart ailment.

Dr. F. Bomar, Knoxville, died July 19 from a heart attack. He was 77.

Dr. David Campbell Maddox, Union City, died August 4th from a heart attack. He was 74 years of age.

Dr. Waldo A. L. McLister, Brighton, died July 9th in Covington. He was 65.

Dr. Hugh Farris Dickson, Covington, died July 14th from a heart attack at Dyersburg. He was 69.

Dr. A. G. Hufstedler, Knoxville, died July 27th from a heart seizure. He was 68. Dr. Hufstedler was the Knox County Health Director.

Dr. Alexander Carmack McDougal, Morris Chapel, died August 3, 1954. He was 53.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Robertson County Medical Society

The Society held its annual fish fry on August 16th at Springfield High School. Dr. John S. Freeman, Secretary, presided at the meeting attended by members and invited physicians from Nashville and surrounding cities. There was no scientific program since the meeting was strictly a social gathering.

Chattanooga and Hamilton County Medical Society

The August 5th meeting of the society was the Annual president's meeting, held in the Interstate Building. Mr. C. Joseph Stet-

ier, Director of the A.M.A.'s newly organized law bureau was the guest speaker and the topic of his paper was "The Present Status of National Legislation." Mr. Jack Ballentine, Executive Secretary of the Tennessee State Medical Association reviewed legislative activities in Tennessee and discussed some of the proposed measures to be presented to the Tennessee General Assembly in 1955. A social hour followed the conclusion of the meeting, at which a buffet supper was served.

Memphis-Shelby County Medical Society

The June 1st meeting of the Memphis and Shelby County Medical Society was held in the auditorium of the Institute of Pathology Building. Dr. S. Fred Strain, president, presided. The program was as follows: "Treatment of Clinical Pneumonia," Dr. E. F. Skinner; "Medical Aspects of Mitral Valvular Disease," Dr. J. Pervis Milner; "Surgical Aspects of Mitral Valvular Disease," Dr. S. Guinn Robins. The Papers were discussed by Drs. Hartley and Cole.

Knoxville Academy of Medicine

Dr. James L. Southworth presented a paper on "Cardiac Arrest," at the meeting held on August 17th. Approximately 100 members were in attendance.

NATIONAL NEWS

TV Postgraduate Program—September 23

The American College of Physicians will put on the first nation-wide telecast postgraduate program on Thursday evening, September 23, from 6-7 p.m. Eastern Daylight Saving Time. It will be a Symposium on the Management of Hypertension. To participate will be Dr. Cyrus C. Sturgis of the University of Michigan and President of the College; Dr. Garfield G. Duncan of the Pennsylvania Hospital; Dr. R. W. Wilkins of the Massachusetts Memorial Hospital, Boston; Dr. Edward D. Freis of Georgetown University; and Dr. F. H. Smirk, professor of Medicine in New Zealand.

This is a closed TV circuit and thus cannot be picked up at home. It will be received in only one place in Tennessee, the Peabody Hotel in Memphis. All doctors of Tennessee are invited to attend the telecast at 4 p.m. Central Standard Time. Dr. W. C. Chaney, Past-Governor for Tennessee of the American College of Physicians, will represent the College at the receiving point.

(The program is made possible through the support of Wyeth, Inc., of Philadelphia.)

The 83rd Congress

The 83rd Congress has adjourned, and with it died the president's reinsurance plan. The Central feature of the bill was the proposed creation of a \$25,000,000.00 Federal Fund on which cooperating insurance groups could draw to meet abnormal losses from catastrophic illnesses or from ventures into new fields of health insurance. Since reinsurance was the administration's proposal, it will probably be reintroduced in the next Congress.

Since the Congress has adjourned, it might be well to review some of the major action concerning health and medical programs that occurred in the 83rd Congress. It enacted a substantial program in the medical and health fields:—(1) Grants to clinics and special type hospitals. (2) A vastly enlarged vocational rehabilitation program with the goal of doubling the number of persons rehabilitated annually. (3) Liberalized tax reductions for medical expenses designed to save dollars for families hard hit by sickness or injuries. (4) Transfer of the medical responsibility of Indians from the Indian Bureau to Public Health Service. Organized medicine on a National level has worked for the passage of most of these bills and has opposed none of them. Only one other major medical bill pushed by the administration was side-tracked by adjournment, that being the bill to revise the system of grants to states for public health work.

MEDICAL NEWS IN TENNESSEE

Veterans Administration

Instructions from the medical director of the Veterans Administration to participating physicians are as follows: Chief Medical Director has instructed that whenever possible, blood smears will be procured prior to rendering treatment to a veteran for suspected malaria. This procedure is being placed in effect in order that the diagnosis of malaria can be more accurately documented especially for treatment and other Veterans Administration benefits. Since specific treatment will depend upon the blood smear being positive, when the blood smear is obtained by a participating physician, the slide should be dispatched to the V. A. Office, at Nashville, Knoxville or Chattanooga, whichever is nearest. Identifying information such as the veteran's name, claim number, time and place of the smear should accompany the slide.

Trained Medical Aid

The Blount Memorial Hospital is to have a school of Medical Technology. Approved by the A.M.A. Council on Medical Education and Hospitals. The hospital and Maryville College will work together on the project. A major in Medical Technology will be offered a limited number of students.

Counter-Offensive Against Polio

Health authorities launched a counter-offensive against an incipient epidemic of polio in Sequatchie County on July 26, inoculating 794 children with gamma globulin.

The Clinic in the cafeteria of the new Dunlap Grammar School was under the general supervision of Dr. H. M. Roberson of Pikeville, health officer in Bledsoe and Sequatchie counties. Assisting him were Dr. Luddington of Dunlap and Dr. Rufus Morgan of Pikeville. Twenty-nine cases of polio exist in the area, four of which have been diagnosed as the paralytic type.

The polio picture through the state, however, was far more encouraging. The number of cases of polio reported in Tennessee is approximately 50% below last year's number, Dr. R. H. Hutcheson, State Public Health Commissioner announced recently. Ninety-two cases of polio have been reported for the first twenty-eight weeks of the year compared to 170 cases during the first twenty-nine weeks of 1953.

The incidents of polio has been high in Tennessee for the past six years. The total for 1953 was 592 cases, 638 in 1952 and an all time record high of 707 in 1951.

State Medical Project May Set National Pattern

The Tennessee State Medical Association's project for persons in isolated Clear Fork Valley may set a pattern for other such areas in the United States.

A feature news story in the *Knoxville News-Sentinel* for July 25 told the story of the developments in the Clear Fork Valley. Dr. David C. Meek a graduate of the University of Tennessee Medical College (1953) has opened an office for general practice in the heart of Clear Fork Valley. At his disposal is a 40 x 80 foot building with several thousand dollars worth of diagnostic

and treatment equipment provided through the community and the Tennessee Medical Foundation to which Dr. Meek is responsible.

The following Knoxville specialists have offered their services without remuneration as Consultants to Dr. Meek:

Medicine	Dr. William A. Nelson
Surgery	Dr. John E. Kesterson
Obstetrics Gynecology	Dr. Albert W. Diddle
Pediatrics	Dr. John F. Mohr
Orthopedics	Dr. George L. Inge
X-ray	Dr. Frank Rogers
Pathology	Dr. Ralph Monger
E.N.T.	Dr. Lamar Knight
Dermatology	Dr. R. H. Wiggall
Urology	Dr. Robert Higgins

University of Tennessee College of Medicine

Dr. I. Frank Tullis of Memphis has been appointed to succeed the late Dr. Conley Hall Sanford as Professor of Medicine and Chief of the Division of Medicine. Dr. Samuel L. Raines, of the Department of Urological Surgery has been advanced to professor and named head of the department. Dr. Nicholas Gotten, in charge of the neurology section, has been made professor.

★

Dr. D. B. Zilversmit, of the Department of Physiology, has been awarded a \$5,292 research grant by the Life Insurance Medical Research Fund for the continuation of studies in producing arteriosclerosis in rabbits.

★

Dr. J. Sherman Davis, of the Department of Anatomy, has been awarded a \$9,000—2 year research grant by the National Science Foundation, to investigate growth mechanisms in the uterus as they are affected by estradiol and aminopterin.

★

Dr. R. R. Overman, director of the section of Clinical Physiology, has been awarded research grants totaling \$67,749.

Of this amount \$27,000 has been contributed by the Memphis Maternal Welfare League, the University and the City of Memphis to provide equipment and nursing care for an eight bed metabolic unit in the John Gaston Maternity Hospital. Here special studies are being made of patients having diseases associated with pregnancy.

The Atomic Energy Commission has awarded \$17,946 for a study of the effects of radiation on the entire body. The investigation is concerned with the changes in body chemistry and function brought about in primates resulting from exposure of the body to high doses of radiation. A 250 kilovolt X-ray machine will be used.

An \$8,694 grant, also from the AEC, will finance a study of the factors which govern the permeability of blood vessels to sodium and potassium.

A \$6,809 grant from the U. S. Public Health Service provides for an investigation of certain drugs which produce an increase in urinary out-put. A \$7,300 grant from the same source will permit a study of the physiological effects of high fever on the heart and blood vessels.

★

A Postgraduate Program on Fractures Dislocations was given at the John Gaston Hospital September 15-17, under the direction of Dr. J. S. Speed, of the Division of Orthopedic Surgery. The class was limited to 20 doctors.

★

New appointments to the faculty:

Dr. Alvin J. Cummings will join the staff of the Division of Medicine to develop the gastro-enterology clinic. His training in this field has been under Dr. H. L. Bockus at the Graduate Hospital, Philadelphia, and at New York Hospital under Dr. T. P. Almy. Dr. R. D. vonCapeller, from Switzerland, has joined the Division of Pharmacology.

★

Specialized equipment for microblood chemical determinations has been purchased as a memorial to the late Dr. Jacob A. Danciger, Assistant Professor of Pediatrics.

★

The University of Tennessee Medical Units \$5,000,000 building program has progressed another step. Architects are drawing plans and specifications for the remodeling of the C. P. J. Mooney Memorial Library Building, for the addition of a floor to the Pharmacy Building at 874 Union, and for the remodeling of the Witterborg (Anatomy) Building.

East Tennessee Heart Association

The Association will present a program on "Progress Reports in Cardio-Vascular Diseases at the Farragut Hotel, Knoxville, on October 8 and 9. Papers will be as follows: By Dr. George E. Burch, Tulane, New Orleans, "Newer Concepts in Pathogenesis, Diagnosis and Treatment of Congestive Heart Failure" and "Psychogenic Affections of the Heart"; by Dr. Emil J. Freireich, Evans Memorial Hospital, Boston, "Blood Volume in Congestive Heart Failure" and "Cardio-Vascular Manifestations of Anemia, Polycythemia, and other Hematologic Disorders"; by Dr. C. Rollins Hanlon, St. Louis University, "The Surgery of Congenital Heart Disease" and "The Surgery of Acquired Heart Disease"; by Dr. Irvine H. Page, Cleveland Clinic "Arteriosclerosis"; by Dr. H. W. Scott, Jr., Vanderbilt "Hypothermia in Cardiac Surgery." In addition there will be a panel discussion, a C.P.C. and a banquet. (No registration fee.)

PERSONAL NEWS

Dr. A. F. Branton, Sr., Chattanooga, former administrator of Baroness Erlinger Children's and Carver Hospitals, has announced his retirement due to ill health.

Dr. Chalmer Chastain, Jr., has announced the opening of his offices at Cleveland.

Dr. Marvin R. Batchelor has opened an office for practice at Cleveland with **Dr. William R. Smith**.

Dr. John P. Carter has opened an office in Chattanooga for the practice of thoracic, cardiovascular and esophageal surgery.

Dr. E. M. Froedge has purchased the Painter-Froedge Clinic at Lafayette.

Dr. Max E. Painter has moved to Gallatin where he will be associated with **Dr. James Loveless**.

Dr. Elias A. Lessom has accepted an appointment on the medical staff at the Veterans Hospital, Murfreesboro.

Dr. Perry M. Huggin, Knoxville, has been asked to serve as consultant specialist at a proposed regional chest diagnostic clinic at Norton, Virginia.

Dr. Richard G. Hofmeister and **Dr. William P. Aiken** have opened offices in the hospital building at Hixson.

Dr. James R. Troutt has opened his office at Gallatin.

Dr. Alex B. Shipley, regional director of the

State Health Department, has been named acting director of the Knox County Health Department.

Dr. James E. Shull has opened an office in Kingsport for the practice of thoracic and cardiovascular surgery.

Dr. Robert E. Mabe, Chattanooga, has joined the staff of Newell Hospital and Clinic.

Dr. Rudolph A. Hoppe has returned to general practice in Chattanooga with **Dr. Vernon A. Burkhardt**.

Dr. Ira M. Long, Chattanooga, associated with **Dr. S. H. Long**, has been certified a diplomate of the American Board of Ophthalmology.

Dr. William N. Cook, Columbia, has accepted the position of director of the Maury County Health Department. He began his duties on August 1st.

Dr. Maurice S. Rawlings has entered practice with **Drs. Fay B. Murphey, Jr.**, and **Dr. W. B. MacQuire, Jr.**, in Chattanooga.

Dr. Grailey H. Berryhill and **Dr. Harold T. McIver** of Jackson have joined the Jackson Clinic for ear, eye, nose and throat practice.

Dr. William E. Van Order, President of the Chattanooga-Hamilton County Medical Society, recently gave a radio talk on "Questions Frequently Asked About Polio."

Five Murfreesboro doctors—**S. C. Garrison**, **C. C. Adams**, **Charles Rath**, **James Tenpenny** and **Sam Hay**—are proposing to build an out-patient clinic opposite the Rutherford Hospital.

Dr. S. Fred Strain, Memphis, recently addressed the Memphis Chapter of the National Secretaries Association.

Dr. Thomas B. Tyler, Kingsport, has recently returned to practice of Anesthesiology at Holston Valley Community Hospital.

Dr. J. Warren Rutledge, Lebanon, has established his office in the Sam McFarland Clinic.

Dr. James W. Richardson, Morristown, has reopened his office for the practice of medicine.

Dr. Edward P. Cutter has announced his candidacy for Magistrate representing the city of Clarksville on the Montgomery County Quarterly Court.

Dr. William P. Templeton has announced the opening of his office in Kingsport.

Dr. R. L. Dozier, Jr., opened his office in Nashville for the practice of surgery.

The Acuff Clinic Association announces the following additions to its staff: **Dr. Dalton S. Oliver**, ophthalmology; **Dr. E. Converse Pierce, II**, general and cardiovascular surgery; **Dr. Arthur J. Muller**, radiology; **Dr. C. Harwell Dabbs**, general and thoracic surgery; **Dr. James L. Southworth**, thoracic and cardiac surgery; and **Dr. Margaret E. Joyce**, obstetrics and gynecology.

Dr. P. W. Elliott, Nashville, presented a paper at the Alumni Clinics of his Alma Mater, the State University of Iowa, on "Twenty-Five Years as a Baby Doctor."

BOOK REVIEW

The Mechanism of Inflammation. Edited by **G. Jasmin, M.D.**, and **A. Robert, M.D.** Montreal, Canada: Acta, Inc. 1953. 308 pages.

This volume records the transactions and discussion of An International Symposium on the subject of inflammation held in Montreal, August, 1953. Forty authorities representing many countries took part in the discussions.

In the first section of the book appear presentations and discussions of certain general subjects having to do with membrane permeability, adaptation in inflammation, factors playing a part in local inflammation and the relationship of the adaptation syndrome to inflammation. The second section devoted to the morphology of inflammation includes presentations related to circulatory changes and capillary permeability in inflammation. Discussions also are included relative to the influence of the steroids on the inflammatory reactions. A third section on chemical studies takes up changes in the ground substance in inflammation, and the effects of steroids on the chemical reactions in inflammation. The fourth section of the book deals with the hyperergic inflammations and entails discussions on histamine, the antihistaminics, allergic reactions and related items.

The symposium permitted the discussion of many basic concepts in tissue reaction. Such a fundamental approach only can some day unlock the secret of many disease processes little understood at the present time. These discussions will be of interest to the student of diseases.

R. H. K.

ANNOUNCEMENTS

Gastroenterological Convention

The Nineteenth Annual Convention of the National Gastroenterological Association and the First Annual Conference of the American College of Gastroenterology will be held in The Shoreham in Washington, D. C., on October 25-27.

The Sixth Annual Course in Postgraduate Gastroenterology, under the direction of **Dr. Owen H. Wangensteen** of Minneapolis, and **Dr. I. Snapper** of Brooklyn, will be given on October 28-30, at The Shoreham and Walter Reed Army Hospital.

This will be the last Convention of the National Gastroenterological Association whose Fellowship have voted to become the American College of Gastroenterology.

The scientific sessions are open to all physicians

without charge. The Postgraduate Course will only be open to those who have matriculated in advance.

Further information concerning the Postgraduate Course may be obtained by writing to: National Gastroenterological Association, 33 West 60th Street, New York 23, N. Y.



Nutrition Symposium

A Symposium on the Nutritional Aspects of Blood Formation will be held at the University of Cincinnati on October 22 through the support of The National Vitamin Foundation. The chairmen will be Drs. M. A. Blankenhorn and R. W. Vilter of the Department of Internal Medicine of the College of Medicine.

The Symposium is open to all interested physicians and scientists.



Conference on Chest Diseases

A conference on silicosis and occupational chest diseases jointly sponsored by the McIntyre Research Foundation of Toronto, Canada, and the Saranac Laboratory of Saranac Lake, N. Y., has been set for February 7-9, 1955, at Saranac Lake.

Doctors, scientists, and businessmen concerned with the problems of occupational chest diseases in all parts of the United States, Canada, and foreign countries are invited to attend.

All communications concerning the conference should be addressed to Mr. Sturgis, Saranac Laboratory, Saranac Lake, N. Y.

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Albert J. Crevello, M.D.

Diplomate, American Board of Psychiatry and Neurology, Inc., Medical Director

Recognizing the variability that exists in the economic level of the individual in the several counties of Tennessee, it is the desire of the State Department of Public Health that each Screening Committee shall have as much freedom as possible in determining the eligibility of an applicant to receive Indigent Hospital service and therefore each committee shall take into consideration in determining eligibility the total income of the principal wage earner of the family; the number of dependents to whom the principal wage earner is responsible for furnishing the necessities of life; the living conditions within the community in which the applicant resides, and the resources available to the applicant other than his total cash income. For example: The applicant may be furnished garden space, milk cow, free rent, etc. All of these factors the Screening Committee shall take into consideration, as a guide, but not necessarily a formula to be followed by each County. There is attached hereto a chart for the committee's information used by the State Department of Public Health in determining eligibility for Crippled Children Service.

• REGULATION 6—(SECTION 7-F). Medically indigent person is one who is unable through his own resources or through resources available to him to provide himself and his dependents with proper medical, nursing and hospital care without depriving himself or his dependents of necessary food, shelter, clothing and the other necessities of life.

• REGULATION 7—(SECTION 7-G). Each hospital accepting an applicant as a recipient of service on authorization of the Screening Committee shall submit to the principal Fiscal Officer of the County in which the recipient resides a statement on forms provided by the State Department of Public Health showing the case number, patient's name, the admission and discharge dates, the number of days in the hospital (payment may be made for the first day of admission or the day of separation, but not for both) total cost (number of days X audited per diem cost as determined in accordance with Regulation 4-1) and the diagnosis, and the name of the referring physician. These forms shall be submitted by the hospital to the principal Fiscal Officer of the County in quadruplicate at the end of each month or such other time as the County may require, certifying that the statement is true and correct. At the close of each quarter, and not later than the 10th of the month following, the principal Fiscal Officer of the County shall transmit these statements (in triplicate) together with a summary statement (in triplicate) to the State Department of Public Health. The summary shall show the authorization number and amount paid for each recipient and shall include the statement that the accounts have been paid.

When this statement is received in the State Department of Public Health, properly certified to, a State Voucher, in an amount equivalent to the State pro-rata share of the total amount paid by the County or such part thereof, of the State pro-rata share as remains to the credit of the County, will be placed in proper channels for reimbursement to the County.

• REGULATION 8—(SECTION 7-H). Method of determination of need for hospitalization of persons eligible for indigent hospital service. The need for hospitalization of the persons eligible for Hospital Service for the Indigent and the choice of the hospital that can most effectively render the particular treatment that the individual applicant needs shall be determined by the medical member of the Screening Committee in consultation with the applicant's referring physician. In all cases where the applicant has been referred to the hospital, the hospital staff or the physician responsible for the patient in the hospital shall be responsible for making a final decision regarding the medical needs of the recipient. Once the applicant enters the hospital and becomes a recipient, the duties and responsibilities of the Screening Committee have ended and the recipient is placed in the hands of the hospital staff or the treating physician.

Approved this 11th day of August, 1954.
Oren A. Oliver, Chairman
Public Health Council
R. H. Hutcheson, Commissioner
Tennessee Department of Public Health

Approved as to legality
this 12th day of August, 1954.
Roy H. Beeler,
Attorney General,
State of Tennessee

Filed this 14th day of August, 1954.
G. Edward Friar,
Secretary of State,
State of Tennessee

PLACEMENT SERVICE

The placement service of The Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 322 Doctors Building, Nashville 3, Tennessee.

Locations Wanted

A 31 year old, married physician, Protestant, at present in U. S. Army until June, Graduate George Washington University, Internal Medicine with specialty in Cardiology. Prefer community 10,000 or over. Available July. LW-70

Married physician, Protestant, graduate University of Tennessee, at present in U. S. Air Force. Desires general practice in or near large city. Available September. LW-71

A 28 year old, married physician, Protestant, graduate University of Tennessee 1949, three years training in general surgery, priority 4, completing residency June 1954, available July 1, 1954. Desires community 20-100,000. LW-76

A 38 year old, married physician, Catholic, priority 4, graduate Hahnemann Medical College, Philadelphia, Pa., GP-Surgery, community preferred, 5-10,000. Available two months after selection of community. LW-77

A 27 year old, married physician, Catholic, priority 4, graduate Loyola University, Chicago, 1952, wants locum tenens near Memphis July 1-September 30. General Practice. LW-78

A 32 year old, married physician, Hebrew, graduate University of Iowa College of Medicine, Board Certificate held in Urology, priority 4, desires clinic, assistant or associate, community 25,000-500,000. Available July 1, 1954. LW-83

A 31 year old, married physician, Catholic, graduate Ohio State University 1947, recently discharged from service, desires general surgery in community 10,000-50,000. Available September 1st. LW-84

A 28 year old, married physician, Protestant, graduate Emory University School of Medicine, Veteran, previous service 3 years U.S.N.R. Active duty. Desires general practice, clinic, assistant or associate in community 3,000-10,000. Available July 1, 1954. LW-87

A 31 year old, married physician, Protestant, graduate Harvard Medical School, eligible for American Board of Surgery, Military status, 5-A, Naval Medical Corps 2 years. General Surgery, desires clinic, community 10,000 or larger. Available August 1st. LW-88

A 30 year old, married, physician, Protestant, graduate Washington University School of Medicine, Priority IV, 2 years residency training-internal medicine; 1 year Gastroenterology (all approved). Desires clinic, assistant or associate, community 30,000 or more. Available July 1st. LW-91

A 28 year old, married, Christian, graduate Medical College of Virginia. Medical officer from July,

1948, to present time. Board Eligible for Pediatrics, desires clinic, Assistant or Associate in community 30,000 or more. Available July 1st. LW-92

A 39 year old, married physician, Protestant, graduate Yale, Board Certificate held in American Board of Surgery, military status—not eligible. Specialty Surgery (incl. fracture surgery), desires clinic or solo, Associate in community 20,000 to 100,000. LW-93

A 42 year old, married physician, Catholic, graduate Tulane, Draft exempt. Specialty Internal Medicine, desires clinic, assistant or associate in community 50,000 or over. Available August, 1954. LW-98

A 33 year old, single physician, Protestant, graduate Faculty of Medicine, McGill University, Montreal, Canada. Priority IV. Medicine and surgery, clinic, assistant or associate in community 5,000-10,000. Available July 15. LW-100

A 31 year old, married physician, Catholic, graduate University of Tennessee, Priority IV, specialty training three years general surgical residency. Community 25,000 or more. Available immediately. LW-103

A 36 year old, married, Episcopal, graduate University of Colorado, certified in Ophthalmology. Presently in U. S. Navy. Desires community 20,000-200,000 in East of Middle Tennessee. Available July, 1955. LW-104

A 32 year old, single, Episcopalian, graduate Louisiana State University. Desires general practice in community 40,000 to 100,000. Available July 15, 1954. LW-105

A 29 year old, married Protestant, graduate New York Medical College, Priority IV, desires general practice in community 5,000 to 20,000. Clinic, assistant or associate. Available July 1st. LW-106

A 32 year old, married physician, Protestant, graduate Duke University, Priority IV. Would consider clinic, assistant or associate. Desires general practice in community 4,000 to 10,000 preferably East or Middle Tennessee. Available July 1st. LW-107

A 30 year old, married physician, Catholic, graduate Baylor University, Board certificate held in Thoracic Surgery. Desires associate in community 500,000-1,000,000. Available August 1. LW-108

A 32 year old, married physician, graduate University of Illinois, Board eligible in internal medicine, completing period of service in Navy. Prefers clinic. Community greater than 6-8 thousand. Available October. LW-109

A 29 year old, married physician, Lutheran, graduate Johns Hopkins, Board Certificate American Board of Surgery. Now on active duty. Available August 1st. Desires community moderate to large city, population 500,000-up. LW-110

A 32 year old, married physician, Protestant, graduate University of Michigan, Diplomate American Board of Surgery. Category IV. Would like association in commu-

nity 20,000 to 150,000. Available immediately. LW-112

A 34 year old married, 2 children, Protestant, graduate University of Minnesota, presently in Army. Desires general practice in community 5,000 to 25,000. Available October 13. LW-113

A 28 year old, married physician, Catholic, graduate University of Tennessee, Priority 4-A. Desires General Practice with Surgery in community 25,000 or less. Would consider clinic or association. Available 60-day notice. LW-115

A 50 year old, married, Protestant, graduate Vanderbilt University, desires general practice in community 10,000-25,000. Would consider assistant or associate. Available September, 1954. LW-117

A 29 year old, married, Protestant, graduate Bowman Gray School of Medicine, Residency in Internal Medicine, priority IV-C, community preferred 20,000 or more. Prefers clinic, industrial acceptable. East or Middle Tennessee. Available Preferably after January, 1955. LW-123

A 34 year old, married, Roman Catholic, graduate St. Louis University, Board certificate Pathologic Anatomy, presently in USAF, available November, 1954. LW-124

A 30 year old, married physician, graduate University of Tennessee, Priority IV-A. Desires general practice. Available Feb. 1, 1955. LW-125

A 35 year old, married, Protestant, graduate Oklahoma University, Priority III. Specialty training—general surgery 4 years. Clinic, assistant or associate. Available now. LW-126

A 40 year old, married physician, Episcopalian, graduate Bowman Gray, Priority IV, Diplomate American Board Internal Medicine, Sub-specialty training in Gastroenterology. Clinic, assistant or associate. Available immediately. LW-127

A 28 year old, single physician, Episcopalian, now in active duty, Board eligible in pediatrics, desires community 10,000 plus. Clinic, assistant or associate. Available August 31. LW-128

A 30 year old, married physician, Protestant, graduate Bowman Gray, Priority IV, Board qualified in Obstetrics and Gynecology. Size of community open. Group practice, assistant or associate. Available September 1. LW-129

A 31 year old, married physician, Protestant, graduate Duke University Board, eligible in American Board of Dermatology and Syphilology. Priority IV. Desires clinic, assistant or associate, also solo. Available October 1. LW-130

A 26 year old, married physician, Protestant, graduate Vanderbilt University, active duty completed, desires general practice in community 10,000 or more, clinic, assistant or associate. Available immediately. LW-131

A 29 year old, married physician, Protestant, graduate Vanderbilt University, priority IV, Available after completing hospital requirements for Internal Medicine Boards on July 1, 1955. LW-132

Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

OCTOBER, 1954

Number 10

Here is the information that places the laboratory and its results in the proper perspective as related to a given clinical picture. It balances beautifully the limitations as well as the values of laboratory studies. The unenlightened use of expensive laboratory procedures cannot be dismissed as a factor in the rising costs of medical care with the inevitable pressure toward the federal underwriting of sickness.

THE ABUSE OF LABORATORY PROCEDURES: WITH SPECIAL REFERENCE TO HOSPITALIZED PATIENTS*

MERLIN L. TRUMBULL, M.D.,† Memphis, Tenn.

Introduction

Because of the increasing role which laboratories have in the practice of medicine, it follows that there is a greater opportunity for misunderstanding the proper use of laboratory tests. *Usually most laboratory procedures are done for confirmatory purposes and, therefore, they are not to serve as a substitute for a careful history and physical examination.* Since laboratory tests are essential and expensive, they should be carefully selected, accurately performed, and critically interpreted. In view of these facts it seems appropriate to point out some of the more common examples of the misuse of laboratory procedures.

The clinician and personnel of laboratories have a common objective, which is to serve the patient with a maximum degree of accuracy and efficiency and at a reasonable cost consistent with sound medical practice. This requires the best use of laboratory facilities which, when wisely selected, help all of us to meet this common objective. Actually the proper use of laboratory services may materially shorten an illness and, therefore, reduce the cost of hospital care. As a corollary of these remarks one might

say that abuses of laboratory procedures represent either direct or indirect abuses of the patient.

It is my belief that the points to be discussed below are in most instances not deliberate abuses, but that they result from improperly collected specimens or failure to appreciate limitations and sources of errors of individual laboratory procedures.

Factors Affecting the Laboratory Generally

Perhaps the most common misuse of laboratory services is the ordering of work to be done immediately or "stat." It is fully realized that a certain amount of urgent laboratory work is necessary, but the decision for ordering it should rest with the physician, and not with a nurse who may have forgotten to order it earlier when it was intended to be handled in a routine fashion. Likewise, the internal organization of a laboratory is fundamentally wrong, if in order to get any reasonable service the latter must be ordered "stat." Too many such requests make truly "stat" service impossible, so that the patient who genuinely needs it may suffer from unavoidable delay. The ordering of this type of service for the convenience of the patient who wishes to temporarily leave his room for personal reasons, or when it coincides with a fluoroscopic examination, or when it is deemed necessary by a nurse or others without approval by a physician appear to

*Read before the Meeting of the Tennessee State Medical Association, April 21, 1954, Nashville, Tenn.

†From the Department of Pathology, Baptist Memorial Hospital, Memphis, Tenn.

be abuses of the proper use of laboratory services.

Since it is not the prerogative of any person in the laboratory to question the need of any "stat" request that might conceivably influence the management of the patient, the successful use of this type of service must rest with its fair and intelligent use by the clinician. Perhaps the physician might determine the need for immediate attention by first asking himself: "Is it urgent enough to have the laboratory call the result to me?" Some procedures would not require prompt service if the hour they are wanted were designated on the request form.

In an effort to achieve the desired goal, we have graded the degree of urgency by use of a special form, which accompanies the regular request. Figure 1 below illustrates this form, which we have entitled "request for special service." We believe that careful use of this form will permit the personnel of our laboratory to discharge their work more efficiently.

When treatment depends at least partly on the results of laboratory examinations, the proper collection of specimens is of the utmost importance. Lack of understanding by nurses or clinicians of what is necessary to achieve this leads to delays or receipt of unsatisfactory specimens. Urine, tissue, spinal fluid, effusion fluid, and any material to be cultured are but a few examples of specimens which should be promptly taken to the

laboratory, so that the results of their examinations will be valid and not misleading. Blood to be transfused should not be allowed to remain in the patient's room before administration of it, for the red cells in bank blood are more fragile than those in fresh blood and should, therefore, be promptly given. These few specific items are mentioned here merely to emphasize the type of knowledge necessary for non-laboratory workers to know in order for the laboratory to begin to properly function.

To obtain suitable specimens it is essential that each laboratory be responsible for informing the physicians and nurses in the technics necessary for them. This may be achieved in a small hospital by personal communication, but there can be no misunderstanding if these instructions are in writing and are readily available at all nurses' stations and perhaps in doctor's offices. This type of information should describe any special data needed by non-laboratory personnel, whenever the latter are involved in securing laboratory services. It should include general data such as what laboratory services are available, when the patient should be fasting, where to place specimens in the laboratory, and how to request services. Detailed information on specific tests should be outlined, also. If these data are in print the inexperienced student nurse, ward clerk, private duty

FIG. 1
REQUEST FOR SPECIAL SERVICE FORM

Baptist Memorial Hospital Laboratory REQUEST FOR SPECIAL SERVICE

Indicate time wanted:

- * ☐ Immediately
- * ☐ Within two hours
- ☐ Within four hours
- ☐ By 8:00 A.M. tomorrow
- ☐ By 10:00 A.M. tomorrow

*These results will be phoned to the staff doctor ordering them. Doctor to be called _____.

Date _____

By _____

(Attach this form on top of the regular request form listing the procedures desired.)

nurse, and physician have a reasonable chance to discharge their duties properly.

Another abuse that is observed is the ordering of more complicated often quantitative procedures when screening qualitative or semi-quantitative tests are first indicated. It is much more desirable, for instance, to procure a qualitative urobilinogen before a quantitative one, a differential blood count before a heterophile agglutination, a complete blood count before a bone marrow examination, a study of platelets from blood smears before a platelet count, and microscopic examination of stools before specific procedures to determine abnormalities in pancreatic function.

Specific Laboratory Procedures

Bacteriological Studies. In the bacteriological section of the laboratory better service to the patient can be obtained if the following suggestions are religiously followed. Every specimen to be cultured should be accompanied with a statement of the type of organism suspected. For example, a stool specimen could be cultured for ameba, shigella, or staphylococci, and each of these suspected organisms requires a different medium. If it is necessary to culture all these organisms, then the laboratory should be so informed. Usually, however, the doctor judging from clinical findings suspects one or more groups of organisms, and when this is indicated to the laboratory culturing for unlikely bacteria is avoided. When cultures of blood are needed, the optimal time to take the specimen is at the height of the patient's fever, or at least during a rise in it, and especially when practical before the administration of antibiotics. When a patient has received antibiotics, regardless of the source of the specimen, mention of the type used should be made to the laboratory, for then the effect of the antibiotic in the specimen can and should be neutralized when possible. Delay in sending to the laboratory of a scant amount of exudate or other material on a dry swab may lead to false results because the organisms have died through drying. If the amount of material is scanty and most easily obtained on a swab, drying can be avoided by placing the swab in another test tube

containing a few ml. of sterile saline solution. In this fashion the organisms are satisfactorily maintained during transit of these specimens.

When sputum is to be cultured the saliva should be washed out of the mouth with water; then instruct the patient to cough up tracheal and bronchial secretions into a sterile wide-mouth bottle. An ordinary specimen of saliva has no value when sputum cultures are indicated. Since it is often difficult to avoid contamination in collecting urine specimens, a micro-organism obtained on culture should be considered as an etiological agent only when it has been cultured repeatedly and where there is corroborating evidence in the urine for the presence of infection. It cannot be emphasized too much that material to be cultured should always be brought promptly to the laboratory. Many pathogenic organisms are too sensitive to survive at cooler temperatures and in a different environment and, therefore, need to be planted on media promptly.

Liver Function Tests. The procedures used in the diagnosis of liver disease often cause great difficulties for the clinician who may not have frequent occasion to use them. The problem is large because the liver has so many functions, and for each of these are one to several possible laboratory tests. To this must be added the secondary or complicating changes which may develop in a liver, and which often mask both clinically and in the results of laboratory tests the primary disease process. In liver disease the laboratory findings especially must be correlated with the patient's history and physical findings. In cases of jaundice the history before, at the onset, and after the appearance of icterus is probably more important than laboratory results several weeks later, for by this time all the evidence may suggest both serious extra-hepatic obstructive disease and marked hepatocellular damage. It is not within the scope of this paper to discuss the proper place of the numerous tests for liver function, but it is appropriate to point out that those tests designed to measure secretory capacity of the liver, such as the bromsulphalein are of no value in shock, congestive failure, hemorrhage, and trauma.

This particular test is of no value when jaundice exists and the laboratory makes its determinations by using a comparator block, though it is reliable when a photo-electric colorimeter is used.

Serum Proteins. Ordinarily the determination of only the total serum protein is of limited value, for the serum albumin may be decreased and the serum globulin may be elevated yielding a normal value for the total serum protein. In general the serum albumin only decreases while the serum globulins only increase in disease. Also the albumin-globulin ratio alone has limited value, for one may obtain a decreased albumin and a low normal value for globulin and still have a normal A/G ratio. Therefore, usually the total serum protein and the albumin-globulin ratio together are necessary at least initially in the study of serum proteins.

Occult Blood. Each physician should be familiar with his laboratory's method for determining occult blood in stools or other materials. Commercial benzedine or benzedine base is too sensitive to be practical in the detection of occult blood. The use of benzedine dihydrochloride is less sensitive but is more specific for blood. Guaiac is the least sensitive, but its quality varies between batches, so that the screening test for blood by use of benzedine dihydrochloride appears to be the most desirable.

The gross inspection of effusion fluids, feces, sputum, vomitus, urine, and other products of the body is often very informative yet neglected. A wider practice of this would frequently avoid the need and expense of laboratory tests. Likewise, the gross and microscopic examination of feces for evidence of fat and undigested meat should be made more often in suspected cases of pancreatic insufficiency before complicated quantitative determinations of fecal nitrogen and fat are ordered.

Hematologic Studies. Probably discrepancies in counts made on the cellular elements of blood lead to more difficulties between physicians and laboratories than do any other group of tests. The inherent technical errors in these procedures are responsible for much of this trouble, so that a better understanding of the limitations of these

tests may alleviate the situation to some extent. It is generally accepted that a red cell count will vary ± 15 per cent in average laboratories, and Ham¹ states that it will vary ± 20 per cent by unskilled technicians. To be more specific, a person with a 4,000,000/mm.³ red cell count may be reported in an average laboratory to have a count varying from 3,400,000 to 4,600,000/mm.³ The lower count may lead to a useless transfusion for a patient being prepared for an operation. To a lesser extent the same type of error is present in the white cell enumeration.

Variations in hemoglobin determinations may be almost as great, depending on the method employed. Ham¹ states that the error by the Tallquist method is ± 10 to ± 30 per cent, by the Sahli it is as much as ± 15 per cent, and by the photo-electric colorimeter it is ± 5 per cent. These figures leave little doubt as to which method is to be preferred, but determinations by the photo-electric colorimeter are fraught with a greater number of technical difficulties requiring carefully controlled conditions and skilled technicians.

Now consider the amount of probable error in the determinations of the mean corpuscular volume, mean corpuscular hemoglobin, and mean corpuscular hemoglobin concentration in the light of the known range of error for red cell counts and hemoglobin determination. For all practical purposes these values for cell indices became almost worthless unless the initial determinations are performed by a skilled technician, whose percentage of error should not exceed ± 5 per cent. Even with this much error, which can hardly be improved, values for the cell indices slightly in excess of the normal ranges cannot be interpreted as being significant.

The differential count on leukocytes is subject to an error of around ± 10 per cent, though it will be very little in the hands of expert technicians. The degree of error is greatest in platelet counts. This is so great as to recommend in our laboratory the method of counting the platelets in 100 oil immersion fields. It appears useless, however, to order a platelet count by any method unless the number of platelets in the blood

smear used for the differential white cell count appears to be substantially reduced.

The packed cell volume or hematocrit, because it is relatively simple to perform and its results are highly reproducible, is the most accurate test to be used in screening patients for anemia or polycythemia. This method combined with a sedimentation rate, and differential count as described by Kyle and Richmond² should replace the conventional complete blood count.

The use of batteries of tests for patients presenting signs or symptoms of anemia, hemolysis, and hemorrhages tends to shorten the time necessary for establishing a diagnosis, and thereby reduce the cost of hospitalization. Each battery contains those procedures which we believe will yield the maximum amount of information, and the patients appreciate the reduced number of venipunctures. The performance of any of these batteries is redundant without a prior complete blood count or other basic blood examinations.

Bone marrow examinations are not needed until no diagnosis can be made by study of the peripheral blood or by other simpler means. One exception would be to study the megakaryocytes of the marrow prior to the performance of a splenectomy for idiopathic thrombocytopenia purpura. A bone marrow study usually adds no information in making the diagnosis of pernicious anemia. This is usually also true in the lymphomas unless the aspirating needle fortuitously strikes a focus of lymphoma in the marrow. The chances for this are too remote to justify the procedure. Obscure infectious disease may occasionally be identified by culturing marrow contents for pyogenic organisms and fungi.

It is difficult to justify extensive anemia studies on patients with over 12 grams/100 ml. of hemoglobin especially in women, for such values may be practically normal for them.

In closing these remarks on hematology, it must be emphasized that most all of the values reported in this field must be interpreted cautiously and should be controlled by comparison with peripheral blood smears either by the physician personally or by working closely with the technician.

Agglutination Studies. Often we are asked if a titer, say for brucellosis, of 1:32 is significant. The answer is that it may or may not be depending on several factors. The importance of a titer in most all of the agglutination tests for specific infections lies in demonstrating a rising titer after an interval of 7 to 10 days. Thus a rising titer immediately assumes diagnostic importance, whereas a single determination yielding especially a lower titer cannot often be fully evaluated.

Blood Tests for Syphilis. The serological tests for syphilis employ a non-specific antigen. This fact accounts for an ever increasing list of diseases which are known to give at least occasionally a false positive test for syphilis. According to one recent report³ 40 per cent of all positive results are false. The importance of such a high incidence of these is obvious. Certainly a patient should not be regarded as a syphilitic and subjected to a course of specific therapy when the only evidence lies in a single test. In some centers the serological test for syphilis is used also as a general screening measure because of the many diseases in which it may be positive.

Blood Transfusions. The relatively great availability of blood for transfusion purposes has created some abuses and problems. The wastage of blood by giving so-called "cosmetic" transfusions has been estimated by some as constituting as much as 30 per cent of all transfusions. These are given merely to make the patient feel better or to make them think something is being done. One can hardly justify a transfusion to a patient having 12 Gm. 100 ml. or more of hemoglobin except during a major operative procedure. To do so is to subject the patient to a real but needless risk and expense without therapeutic value. It is contraindicated in a borderline anemia because it is generally believed that the lowered oxygen tension stimulates the production of red blood cells by the marrow. The administration of blood, then, tends to remove the very stimulation the marrow needs to correct a questionable or mild deficiency. I know of three needless deaths from transfusion reactions when blood was

given "just for good measure" without substantial indications for it.

There will always be some risk attached to the administration of blood, and these risks vary from mild transient ones to fatal reactions. This includes the danger of transmitting homologous serum jaundice, for which there is no satisfactory method of prevention. It has been said that we now have more deaths annually from blood transfusions than from appendicitis.¹ Steadily improved technics for the determination of the compatibility of blood have made this therapeutic tool safer, but the chance of mixing up blood specimens in the laboratory or the administration of the wrong blood to a patient represent the human error that will continue to exist. Every physician who orders a transfusion must, therefore, be mindful of the risks involved and balance them against the possible benefits.

It is an abuse of the laboratory when a physician orders a transfusion without at the same time stressing to the patient or family that they must replace that blood. This is true in those hospitals where the supply of blood is not dependent upon purchases made from private blood banks, and in my opinion blood voluntarily replaced tends to come from better donors than from those who sell it at prevailing professional donor prices.

Histological Studies. The last phase of laboratory work to which reference will be made is the histological section. The comments to be made here are not strictly abuses but suggestions, which should contribute to the best interests of both the patient and his physician. Each surgical specimen should be submitted with at least the following information:—complete name of patient, age, sex, tissue or organs submitted, and postoperative diagnoses. If endometrium is included, the date of the last menstrual period should be listed. Other pertinent data is welcomed. This information aids the pathologist in his examination, and in this way he can be of maximum help to the surgeon. Since a suspected site of endometriosis often blanches after excision of the organ, a safety pin inserted through the region may more readily lead to the microscopic confirmation of the clinical diagnosis in a

greater percentage of cases. Biopsy material, including uterine curettings, should be protected from drying and preferably be placed immediately in the fixative preferred by your pathologist. Biopsied lymph nodes from obscure cases should be also cultured. This is best achieved by bisecting the node at the operating table by the surgeon, who places half of it in a sterile petri dish for the bacteriologist. The other half can then be put in a fixative for histological examination.

The frozen section technic has limitations which are not always appreciated and, therefore, may be subjected to abuse by either the surgeon or pathologist. Failure to understand the proper role of this tool has been known to lead to strained relationships between surgeons and pathologists. Now, let's examine these limitations. First, by this technic a small piece of tissue is usually hastily fixed in a hot formalin solution, which necessarily produces considerable shrinkage in the tissue. Next the tissue is quickly frozen and this creates added shrinkage. It is usually not possible to cut tissue slices as thinly as when it is embedded in paraffin so that we have to examine microscopically thicker slices. Finally, the staining technic is not as sharply polychromatophilic as our permanent stains are. In a high percentage of cases the correct diagnosis can be made, but there remain a few cases where the diagnosis is either doubtful or indeterminate. Occasionally the diagnosis will prove incorrect. The surgeon who accepts a frozen section diagnosis as being as accurate as the report from paraffin section examination will encounter a disappointment from time to time. This is made much worse when he tells the patient this diagnosis as though it were a final one, only to find out later that the diagnosis from the permanent sections is different.

There are a few circumstances where use of the frozen section technic usually is not indicated. These are, first, when the diagnosis is obvious in the tissue's gross appearance. Under these circumstances it is wasteful of everyone's time and the patient's money, except for academic reasons, and then no charge should be made. Secondly, when the entire available tissue is too small

to leave adequate tissue for confirmation by permanent sections. This is generally true except in those cases where a diagnosis from frozen section examination can alter the present operative procedure. Thirdly, examination of intraductal papillomas of the breast are not suitable for this technic. Malignancy in these is based upon finding evidence of invasion, and this will be found at the point of attachment of the stalk to the duct wall. Usually this site is so small that much of the important tissue is destroyed in making the frozen section. Furthermore, since these lesions when malignant tend to be fairly well differentiated tumors, it is often difficult to be sure of one's diagnosis, so that frequently the pathologist has to defer this anyway. Fortunately the vast majority of these tumors are benign.⁵

Tissue known to be infected with contagious organisms, such as tubercle bacilli, should be carefully wrapped and so labeled on the outside. This helps to protect subsequent examiners by alerting them.

Conclusion

Successful service by a hospital laboratory to patients is dependent upon continued close cooperation between the physicians, nurses, and the laboratory personnel. Only in this fashion can each party understand each other's requirements and problems. In patients presenting problems which may be aided by the services of a laboratory, the staff of the laboratory and especially its pathologist are there to help.

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Discussion

JOHN D. HUGHES, M.D. (Memphis): In the opening paragraph of his timely paper Dr. Trumbull wisely stated that laboratory procedures are not to serve as a substitute for a careful history and physical examination. There is no diagnostic tool in all of medicine to compare with a thorough, intelligent history patiently gathered and properly evaluated. Who of us has not had the experience of listening to the ominous story of angina pectoris with its squeezing retrosternal pain usually radiating down the left arm, brought on by exertion or excitement, and relieved in two or three minutes by rest or sublingual nitroglycerine, only to find the electrocardiogram completely normal? Under these circumstances the experienced physician trusts his history and makes the diagnosis of angina regardless of normalcy of the electrocardiogram. The same is true when the classical history of peptic ulcer cannot be proved by positive radiographic findings, as is sometimes the case. It is my considered opinion that the history will make the diagnosis in seventy-five per cent of cases. Yet it is without question the most sadly neglected aspect of medicine today.

Instead of spending a few of the patient's minutes with history and physical examination and many of his dollars with tests, we should spend all of his time needed for the former and then ask ourselves honestly what are the minimum laboratory procedures necessary to prove the diagnosis definitely and safely. Only these should be ordered.

The time limitations of this discussion preclude more than a few brief remarks about certain tests. Let us first consider a urinalysis in a woman. Ordinarily it should be a voided specimen, as catheterization if used routinely in the office is bound to result in an occasional violent urinary infection. However, if the voided specimen shows pus it should be checked at once by a catheterized specimen to be sure that the pus cells actually come from the urine instead of from the labia, as they well might in the voided urine. This ancient piece of knowledge is so elementary that it is a shame to have to mention it. Yet because of failure to follow this rule, one frequently sees women being treated for a pyuria which they do not have.

While on the subject of urine, it is an appropriate time to emphasize that whenever even a trace of glucose is found one should order a full fledged glucose tolerance test. To recheck the urine only and conclude that because it is negative on the second test the patient is not a diabetic is a pitifully inadequate way to rule out such a dangerous disease. Nor should one rely on a single fasting blood sugar to exclude diabetes. Many a patient with this disease starts the day with a perfectly normal blood sugar, yet when put to the test of his ability to tolerate glucose his blood sugar rises to diagnostically diabetic levels.

Dr. Trumbull has pointed out the inherent technical errors in performing blood counts, hemoglo-

bin determinations, and in computing mean corpuscular volume, mean corpuscular hemoglobin, and mean corpuscular hemoglobin concentration. In studying a case of anemia why should we compound these errors by flooding the patient with liver extract, vitamin B₁₂, and iron before we have diagnosed the type of anemia? Yet daily this is done. The number of people erroneously labelled pernicious anemia is unknown but it must be legion. It could be reduced very quickly would we but remember to perform a gastric analysis on cases of anemia. If we withdraw free hydrochloric acid, even a tiny amount, from the stomach we have flatly excluded pernicious anemia from any further consideration and can busy ourselves searching elsewhere for the etiology of the anemia.

Any careful workup of a patient should include a blood serological test. While syphilis is declining it certainly is far from wiped out and I find several new cases each month, almost always in people I would not have suspected of having the disease. One must carefully exclude the false positive reactors, and personally I never institute treatment until the serology has been checked in

at least two different laboratories by two or more of the available tests.

Perhaps the crudest test in all of medicine is the basal metabolic rate determination. The machine can leak oxygen, the soda lime absorber may need changing, the nose clamp may be improperly applied, and the mouth piece may not fit. Add to all this the fact that nervous patients often experience claustrophobia and gulp oxygen rapidly, and one begins to understand that the score should not be accepted unless the full circumstances of the test on that particular patient are known. False high and false low readings are common, causing many an innocent euthyroid patient to be treated futilely and expensively over prolonged periods of time for the hyperthyroidism or myxedema which was non-existent from the start.

In closing I should like to compliment Dr. Trumbull for the careful thought which has gone into his presentation. We need more papers on this subject by experienced men such as he is to teach us how better to use and not to abuse the fine laboratory procedures which are available in medicine today.

The Adrenal Cortex and B Vitamins in Diabetic Retinopathy. Becker, B., Maengwyn-Davies, G., Rosen, D., Friedenwald, J., and Winter, F. *Diabetes* 3:175-187. 1954.

Three new suggested interrelationships of diabetic retinopathy and nephropathy with adrenocortical hyperfunction, B₁₂, and mucoprotein and lipoproteins are outlined.

The retinal capillary micro-aneurysms seen in diabetic patients at autopsy closely resemble the renal glomerular lesions seen in the Kimmelstiel-Wilson syndrome. Recent evidence suggests a role of the adrenal cortex in the pathogenesis of this syndrome.

Diabetics *without* retinopathy in general have a decrease in adrenocortical capacities, excreting smaller than normal amounts of oxysteroids in the urine. Diabetics *with* retinopathy have excessive amounts of free oxysteroids in the urine. It has been demonstrated that diabetic retinopathy improves following decrease in adrenocortical function. Histopathologic evidence supports the clinical impression that adrenocortical function is associated with the nephropathic group. Alloxan diabetic rabbits developed lesions resembling Kimmelstiel-Wilson nephropathy following cortisone or ACTH administration.

Vitamins of the B complex group—particularly pantothenate and B₁₂—are also implicated as

factors. Rats deficient in pantothenate have decreased adrenocortical capacities; treatment with pantothenate results in prompt improvement. Cortisone mobilizes B₁₂ from the tissues and promotes its excretion. In diabetics with retinopathy, B₁₂ is excreted in much larger amounts after test doses. Non-retinopathic diabetics have an abnormal retention of B₁₂ after the test dose, suggesting again decreased adrenocortical function.

A compatible correlation between the increased level of certain serum polysaccharides and the retinal and renal lesions is suggested. ACTH administration increased the polysaccharides of the diabetic with glomerulosclerosis. Serum lipoproteins are markedly elevated in diabetics with retinopathy and nephropathy. Stress increases these same S_r 12-20 lipoproteins. Alloxan diabetes and cortisone, which produce nephropathy in rabbits, interfere with normal lipoprotein metabolism. Vitamin B₁₂ has lipotropic properties, and hence abnormal lipoprotein metabolism associated with adrenocortical hyperfunction may be correlated with this along the lines already cited.

Further study is needed to synthesize these concepts. (Abstracted for the Tennessee Diabetes Association by Jean Murray Hawkes, M.D., Memphis.)

Here is a simple, concise exposition of the best management of burns.

THE TREATMENT OF BURNS IN THE SMALL HOSPITAL*

CHARLES R. ZIRKLE, M.D., Knoxville, Tenn.

When I was asked to give a paper on the treatment of burns in the small hospital, I readily agreed, as the majority of the burns I have come in contact with were treated in a small hospital, the East Tennessee Crippled Children's Hospital. I would like to interject into the discussion at this time that, whether in a small or large hospital, there is a definite pattern to be followed in the management of the burned patient and that there are three separate phases to the problem.

Acute Phase

The acute phase lasts over a period of several hours to several days with a direct ratio to the degree of body surface burned. One has as his aids to combat the shock, blood, plasma, dextran and electrolyte solutions. It has been our policy to insert a suitable polyethylene catheter into the ankle vein and give blood, plasma and electrolytes as needed by constant drip, determined by the hematocrit studies, by the extent of burned surface and the shock level of the patient. We have followed no special formula, as set by numerous workers in the field, but have gauged the amount of fluid needed by urinary output, general appearance of the skin, tongue, thirst, and the hematocrit. It is felt that the percentage of burned surface should be estimated and that this is relatively easy to do by the "Rule of Nines."

It has been our feeling that there is no substitute for blood to keep the patient on a level keel. It is most necessary to follow the course of these patients at close intervals with an unjaundiced eye, if they are to survive the critical period of shock, the first 24 hours being the most critical. It has been our policy to treat all burns by the exposure method for the past two years and I am convinced that it has decreased

the hospitalization time by 25 per cent. By this method there are fewer second degree burns that are converted to third degree burns by infection; the patients are not bathed in the exudate and the moist dressing, which offer a perfect medium for the ubiquitous bacteria. It is wise, I believe, to warn that the open method of therapy is not a road to easy treatment and neglect of the patient, because these patients must be observed frequently and any underlying pockets must be opened and drained. The patients are kept on sterile sheets for the first couple of days and then on regular clean sheets after the crusts are dry. Where there is pressure the crusts will not hold up unless there is a way to obviate this from happening; the patient will of necessity have to be dressed and we have used large amounts of washed gauze, a crinkly Kerlex and elastic bandages.

Healing or Intermediate Phase

After the acute phase of the burn has been passed one must protect the patient from the inevitable anemia that occurs and again in direct proportion to the severity of the burn, and to obviate infection and to prepare the patient for reconstruction if third degree loss has occurred. It is well to do frequent hematocrit studies and use appropriate therapy in the form of blood, etc. All patients are started initially on penicillin or other suitable antibiotics which are continued as required to combat infection.

The crusts usually begin to separate on the tenth to seventeenth day and are debrided as they separate. If it is obvious that there is a third degree loss, the patient is started on daily tub baths. All dead tissue is debrided manually and with enzymatic materials in the form of streptokinase-streptodornase, Tryptar, one-half strength Dakins solution, etc. When the patient is clear of all slough, the granulations are firm,

*Read before the meeting of the Tennessee State Medical Association, April 19, 1954, Nashville, Tenn.

the blood level is adequate, and the protein at a satisfactory level of 6.5-7 grams and there is no infection, one must begin the reconstruction of the burned surface and this is done as rapidly as possible from the date of the burn.

There has been a considerable interest, expressed in the literature of late, directed toward immediate excision of burned surfaces and grafting. I feel that this has a place in the care of the burned patient who has a small burn and where there is no doubt of third degree destruction of the skin. However, this does not really present a problem at the Crippled Children's Hospital as the majority of the burns that are seen are severe, and also the majority are in the late second phase when first seen.

I am sure it is not necessary to remind this group that only skin from the patient will survive and persist for any durable covering. It has been shown in the past that homographs have had a life saving effect as a temporary covering, but these always perish and melt away in three to seven weeks and the patient must still be covered by his own dermis.

Some three years ago, with the advent of ACTH and cortisone, several reports appeared stating that homographs would survive when these steroids were used, but these reports have not been substantiated. It is felt, however, that they are an adjunct in the acute phase to decrease the shock and they do lower the temperature and improve the appetite.

Reconstruction Phase

I feel that the split grafts are the best type of covering to use. The area to be covered determines whether they are used as postage stamp grafts or as large sheets. The latter is my choice in almost all cases if at all possible. The entire surface is covered by sewing the sheets of skin as one would baste the seams in a dress, using fine 6-0 silk.

Obtaining the Graft. The site from which the graft is to be taken is of necessity dependent upon the site of the burn, but the best areas are the thighs, back, abdomen, buttocks and lower legs in that order.

The skin is prepared with soap and water, 3 per cent iodine, alcohol and washed with

ether. If the graft is to be taken with the Padgett dermatome, the skin is painted liberally with Padgett-Hood cement and allowed to dry at least five minutes. The dermatome is set up with a sharp blade (and this is important) and the drum painted with a thin cover of a black plastic adhesive called Plastiktrim which has an increased cohesive power to the Padgett cement, and allows the skin to readily separate with the glue left on the drum. The skin is cut at a thickness of 1/14,000 of an inch. The skin can also be taken with any number of dermatomes, but I prefer the Padgett for large grafts. The Brown electric dermatome is, however, excellent for procuring the skin from the lower legs, but does not get the clear-cut margins. I feel that one should use the dermatome he can use best.

When sufficient skin has been procured the donor sites are dressed with sections of old sheets which have been treated with mercurochrome and vaseline, only enough to barely keep them from sticking. This fine mesh sheeting will not allow the granulation to grow through the meshes. Bulky pressure dressings are applied and held in place with elastic bandages.

Preparation of Site to Be Grafted. It has been our practice to remove the granulation down to the yellow bed, also the purple margin of the burned surface if a complete covering is attempted. The bleeding is stopped with warm saline compresses. The grafts are then sutured in place with fine silk. Occasionally a drainage cut will be made if there is a pocket beneath the graft. All air, blood and serum is expressed from beneath the graft and pressure is applied in the form of moist saline 4 x 4 bulky abdominal pads, Kerlex gauze and incorporated in this bulky dressing are catheters for subsequent irrigation. The entire dressing is held in place with compressing elastic bandages. In the axilla, popliteal space and other movable parts, plaster splints and bulky bed pads are used for immobilization. All during the foregoing procedure the patient has been receiving blood in adequate amounts for replacement and I can assure you that these patients lose a greater amount of blood than one realizes.

The patient is again started on antibiotics

and at the end of 24 hours the grafted areas are irrigated with a Zephiran-saline, penicillin solution three times daily for the next four days. On the fifth postoperative day the patient is dressed, and if a child, it is done under anesthesia. All sutures are removed and pockets of serum are evacuated if present. Pressure dressings are reapplied after the margins are painted with 10 per cent aqueous mercurochrome. This process is repeated at 3 to 4 day intervals for two or three times. Then daily tub baths are given until all areas are healed. The donor sites are not disturbed for 10 to 14 days, unless one feels that they are not dry. Usually by the twelfth to fourteenth day all the donor sites are healed and the dressings fall off.

(The following Kodachrome transparencies are examples of patients done in the past few months and, as you can see, would present problems if not reconstructed.)

Discussion

JOHN E. KESTERSON, M.D. (Knoxville): I feel that Dr. Zirkle has given a truly excellent paper on the treatment of burns in the small hospital. He had emphasized to me previously that he did not plan in any sense to review the literature, but rather to give his opinions about how burns should be treated and how burns are treated by him. This paper has been full of excellent suggestions and he has done the thing that is so seldomly done and that is to give, step by step, an outline of therapy from the time of admission of the patient to the time of his discharge from the hospital.

It is very interesting to speculate about the various vogues of treatment which have been popular with respect to the treatment of burns. We know that the exposure method of treatment was reported as early as 1905. Most of us will recall the use of tannic acid in the 1920's and 1930's which was fortunately supplanted by the now standard use of pressure dressings. Surgery and medicine seem to travel in cycles and again we find that the exposure method of burn treatment is becoming very popular. Its economy and applicability in the event of an influx of large numbers of burn cases make it most attractive.

It is not amiss to re-emphasize that the exposure treatment of burns is not an open treatment. Partial thickness burns, when exposed to air at room temperature, form a dry firm crust composed primarily of dried burn exudate. A full thickness burn forms a hard, dry eschar. These crusts and eschars serve as effective covers of the burn wound. It should be re-emphasized that open granulating surfaces are not treated by exposure due to the extreme loss of fluids from the surface. It should also be remembered that the eschars of all full thickness burns must sooner or later be removed, especially if there is suppuration, and grafts must be applied to the clean surfaces.

I am very glad that Dr. Zirkle has shown considerable restraint in his discussion of the use of the adrenocortical hormones. I believe that these do have a place, especially in the toxic patient with a high temperature who has a poor appetite, but I do not feel that these drugs serve as a panacea and in any sense replace good surgical therapy and technic.

I feel that this brief paper is extremely important (in view of the possibility of treating a great number of burns following thermonuclear explosions), practical, well prepared and enjoyable.

In addition to those things directly applicable to the physician in his occupation, there is much discussion in this paper which is basic in the management of diseases of the skin in general.

THE CARE OF THE PHYSICIAN'S SKIN*

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The problem of industrial dermatoses is a major one, but no working man is exposed to more irritating or potentially sensitizing substances than the physician. It is not surprising that each year surgeons or obstetricians must find other fields of medicine into which to enter because their hands cannot tolerate the necessary scrubbing. Some promising trainees for private medical practice must direct their future planning toward administrative positions for the same reason. Much of this could be avoided if proper care is taken of the skin.

Contact Dermatoses

In a recent study¹ of dermatoses in physicians it was stated that the commonest causes of dermatitis of their hands were from surgical scrubbing, rubber gloves, local anesthetics and antibiotics in that order. I would like to discuss these separately:

Mechanical trauma from scrubbing and the use of strong soaps and detergents have a severely defatting effect on the skin. This is particularly true when the skin tends toward dryness in the first place. Then, when scrubbing is completed, alcohol or other antiseptics have a further drying effect. The skin becomes "chapped," irritated and erythematous, and tiny fissures appear. At this time pyogenic organisms are afforded an easy pathway so that secondary infection occurs. Eczematization with more irritation at each subsequent application of the brush and detergent may be quite incapacitating. The situation is quite analogous to that of the young housewife with her dishes, diapers and household cleansing, and whose skin difficulties worry many of us everyday. The best counter-measure here is to use a mild white soap, such as Ivory, for scrubbing and to avoid the scrub brush for

awhile, when the first signs of a rash appear. A light hand lotion may be valuable when applied several times daily followed by a heavy cream at night, such as:

Rx Lanolin
Cold Cream
Vaseline aa q.s.

The hexachlorophene-containing surgical detergents, though apparently irritating at times, have probably caused a decrease in the incidence of pyoderma and infected eczemas because of their bactericidal properties. The fact that much less time for scrubbing the hands is required with these new agents would tend to lessen the amount of sebaceous material removed from the skin.

Rubber gloves have long been a source of hand eruptions in physicians.² In cases of true rubber sensitivity, neoprene gloves often allow a man to remain in surgery. We must not forget that orris root may sometimes be found in glove powders, and that various antiseptics, such as mercurials, are used in "prepping" rubber gloves. I recall the case of a practical nurse who washed her hands in a Lysol solution and developed a very acute dermatitis venenata from the Lysol. After recovery she wore some sterile gloves which had been cleaned with Lysol, washed and autoclaved, and immediately she developed just as severe a case of dermatitis as before.

Local anesthetics frequently tend to sensitize the practitioner, with procaine being the most frequent offender. Nupercaine, benzocaine, Pontocaine, Butacaine and cocaine may also create allergic reactions. Probably antiseptics are more frequently sensitizing than anesthetics. The mercurials have long been known to be allergenic, and formaldehyde follows closely behind. The antibiotics have come in for their share of criticism as trouble makers. It is true that only a small amount of penicillin or strep-

*Read before the Meeting of the Tennessee State Medical Association, April 20, 1954, Nashville, Tenn.

tomyacin might get on the hands when needles and syringes are handled, but very little is needed for a reaction in an individual who has developed an idiosyncrasy to a drug.

Other substances which may cause a contact dermatitis in practicing medicine include chromium, nickel, adhesive plaster, various plastics, paper towels, orthopedic plaster and rubber elastic bandages. Let us not forget the various testing materials used by allergists for skin tests which may backfire and sensitize the investigator. Also in attempts to desensitize others, he may sensitize himself!

Infective Dermatitis

I know of no satisfactory explanation why we physicians are not more frequently infected by the very diseases we treat. The bacterial count on physician's and nurse's skin has been found to be definitely higher than that of non-medical individuals. Yet cases are quite rare apparently, in which bona fide traceable infections can be found. I am sure that such parasitic skin diseases as scabies, dermatophytosis and pediculosis have been contracted by members of the medical profession from patients. Usually, however, more intimate contact with the source of infection is necessary than is ordinarily required in the care of the sick!

All of us have probably touched infectious syphilitic lesions many times or pierced our fingers with needles just used to withdraw syphilitic blood. However, it is rare indeed that the doctor develops an extra-genital chancre. Nevertheless it is important, as always, that syphilis be handled with great respect and that careful washing be done after handling these cases.

The pyodermas are in a much different category however. They are easy to pick up on casual contact if the physician is sensitive to the organism. Impetigo is so highly contagious that considerable care in cleansing the skin after exposure must be taken. I know doctors who are in mortal dread of patients with carbuncles or furunculosis. When these come into their office for treatment they have found that utmost precautions must be taken to prevent the development in themselves of a similar condition, or at least a follicular pyoderma.

Radiodermatitis

Perhaps the most severe dermatological disorder to be discussed here is that of radiodermatitis. If there are any radiologists of the "old school" here today, they will probably have some keratotic lesion on their hands due to lack of protection from their X-ray machines. These men have a very good excuse too, since knowledge of the cumulative effects of radiation was meager until quite recently. The tubes of the past were open and the radiologist was not properly shielded. Consequently many of the pioneers in their specialty paid with their limbs and even their lives. These men are to be pitied and revered.

The present day physician, however, has no such excuse. It is the rankest form of stupidity now, for instance, to perform fluoroscopic examinations without leaded gloves. A physician who would set fractures under a fluoroscope without gloves might expect to lose his hands and not infrequently does. I recently saw a woman who had broken off a needle in her hand. She had a severe roentgen dermatitis, necessitating amputation of several fingers. We found that her doctor in a small town in Missouri had probed for the needle under his newly-acquired fluoroscope for over an hour and finally gave up. He had worn no protective gloves and lost most of both hands within the next few months. In this instance the doctor was an osteopath, but that is of small moment. Members of our own profession often gain possession of an X-ray machine and act like a child with a new toy. Never bothering to learn the fundamentals of radiation, all they care about is using their fascinating plaything. Besides the damage done to patients (and we dermatologists see all too much of this) they often injure themselves. O'Leary of the Mayo Clinic recently stated that an average of three physicians with radiodermatitis are seen at the Clinic each week. Many of these are cases of old exposure like the pioneers I've previously mentioned, but the "new" cases are still disturbingly frequent.

Cipollaro summarizes the problem neatly when he says: "Physicians are still developing radiodermatitis, I am sorry to say. In my opinion, this is due to gross negli-

gence and carelessness on the part of the physician. There are physicians who do fluoroscopic examinations without proper protection against stray and direct radiations. There are surgeons who look for foreign bodies under a fluoroscope for prolonged periods of time without proper protection. There are surgeons who set broken bones under the fluoroscope. There are some physicians who use X-ray equipment without proper screening, and there are some physicians who handle radium, radon, thorium-X, and other radioactive agents without proper protection, and there are some dentists who still hold film in the mouth of the patient while taking radiographs."

Over-treatment

One of the most frequent problems of the dermatologist is that of over-treatment. Everyone knows how to treat skin diseases, and many times daily we are told that the patient "has used anything anybody has suggested." The neighbor, the maiden aunt, the corner druggist, all have their pet remedies. A salve in the medicine chest originally purchased for grandpa's toe itch is applied to the baby's infantile eczema. Often the results are nearly disastrous and much time is wasted soothing down an acute chemical dermatitis which should never have occurred. A particularly severe eruption which I saw recently had been treated with, of all things, sweet cream and gunpowder! I think we all agree that a physician often makes a very poor patient. His attempts at self-medication are often quite injudicious and illogical.

It has been said that more physicians are incapacitated by contact dermatitis from self-medication than from occupational exposure. Tending to doubt his own diagnosis, the doctor will try first one sample ointment after another. Too stubborn to ask a dermatologic colleague, or lacking the time to go and see him, he empties his sample drawer and often plays with fire.

Let us follow through a case of this sort. Dr. X has just noticed a small area of vesiculation on his thigh, which for convenience sake we'll suppose is herpes simplex. All he could find at home was a bottle each of merthiolate and tincture of iodine. Neither

of these, tried in rapid succession, did any good. Lacking quick results he then applied a miracle antibiotic ointment of such a wide spectrum it couldn't possibly miss destroying any lingering pathogen. Noticing the rash spreading ring-like he decided it must be mycotic, so a strong fungicide was applied, in this case Whitfield's ointment. Finding the itching was increasing he thought a benzocain-containing ointment should be just the thing! Peculiarly enough, the rash began oozing then, so he tried to dry it up with calamine lotion. The doctor was surprised when pus and even more edema formed under the thick crust that the calamine lotion made. He thought, "a good strong 10 to 20 per cent ammoniated mercury ointment should be the proper approach now!" "Now, why did that rash become worse again all of a sudden? Maybe some sulfathiazole ointment would turn the trick!" So Dr. X put some on, after scrubbing well with tincture of green soap and a good scrubbing brush! Since the sulfa salve didn't help, penicillin ointment ought to be better. No, that seemed to make it worse, so he tried Furacin ointment. Strange how much more widespread his dermatitis was than at first!

The fact of the matter is that this man had converted a minor eruption into a major one by the foregoing comedy of errors. It would be funny if not so tragic, as much valuable time was lost, and much suffering caused by just such an approach. How much better that doctor would have been if he had applied wet packs or soaks!³ These could have been epsom salts or boric acid, aluminum acetate or dilute potassium permanganate solutions. Normal saline, or as a matter of fact, plain tap-water would have been much better than the various medications used. Then a simple boric acid ointment, zinc oxide ointment or plain vaseline could have been applied as a dressing. One would have expected much better results than with the course so followed. Patience is the key in treating ourselves as well as other patients, and undertreatment would be greatly preferable to overtreatment.

The foregoing hypothetical doctor had approached his problem in a very haphaz-

ard way, and in so doing had made several therapeutic errors.

In applying an antibiotic ointment to any skin eruption except a pyoderma he was likely to do little good and might have caused considerable harm. A number of these drugs are potent sensitizers and are likely not only to irritate the skin, but to prevent further use of that drug. Who knows, perhaps it might be needed urgently in the future for a serious malady. Not only that but the physician is then forced to avoid this material in providing therapy for his patients, because of the reaction if the drug should touch the skin.

When the acute rash began spreading in a ring-like eruption on his body, the doctor jumped to the conclusion that it was ring-worm, a condition frequently misdiagnosed. Whitfield's ointment was applied then with much more resultant irritation. This ointment is a strong keratolytic agent and must not be used on acute lesions. This medication is indicated only for a chronic, thickened, macerated mycosis. To apply it to an acute eruption, of fungal nature or otherwise, is simply asking for trouble. Actually only a very small percentage of annular or ovoid lesions are ring-worm though a much higher number are diagnosed and treated as such.

Benzocaine was tried next by our doctor with rather severe consequences. Many patent or proprietary antipruritic ointments contain benzocaine, or a similar drug such as Nupercaine or Pontocaine. All of this group are frequent sensitizers and had better be ignored in the physician's therapeutic armamentarium. A newer unrelated antipruritic drug, Quotane, appears to be frequently effective and much less likely to sensitize the user.

When weeping and oozing began to bother him, the physician applied calamine lotion. When the serous exudate combined with the powder of the calamine lotion a thickened crust formed. This serves as a well protected area for pyogenic organisms to thrive and multiply. It is a good rule never to use calamine lotion on an exudative eruption. Aside from the secondary infection which frequently follows, the crust often tends to crack and add to the discomfort present. It has been common practice

for a long time for many people to scrub a crusted area with tincture of green soap. This is a very unwise thing to do as the high alkalinity of the soap is not well tolerated by an irritated and denuded skin. Also the alcohol is overly drying when used in this way. It is probably better to avoid soap in any form whenever an acute eczematous eruption is being treated. (Many mothers use tincture of green soap and a brush to scrub off the crusts of impetigo on their children's face. It would be much more rational and far less irritating to apply boric acid compresses until the crust is soaked off.)

Following this the physician applied in rapid order a strong ammoniated mercury ointment, sulfathiazole ointment, penicillin ointment and Furacin ointment. If ammoniated mercury is used, there is rarely any excuse for using a stronger one than 3 per cent. There is literally no excuse for the use of sulfathiazole, penicillin or Furacin topically. These are all very potent sensitizers and have been superseded by a number of topically applied antibiotics with a much lower rate of sensitization. Among these are Neomycin and Bacitracin which are probably the drugs of choice today for superficial pyodermas.

Summary

In the past few minutes, I have presented a variety of problems peculiar to the care of the physician's skin. As we have noticed, the bacterial population of the practicing physician is much higher than in other individuals. He is constantly exposed to pathogenic organisms. He is forced to scrub his hands, both in the operating room and in the office, a great deal more than most people, thereby removing the protective oil and opening the way for external irritation and infection. And finally, the doctor is prone to treat himself with all sorts of self-medication, which may be injudicious and sometimes actually harmful. Treat your skin kindly as you are going to need it for a long time.

Bibliography

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3. *Ibid.*, pp. 67-69.

Discussion

R. N. BUCHANAN, JR., M.D. (Nashville): I have always felt that the obligation of the opening discussor is to ask questions about the material which has been presented, to perhaps express a difference of opinion and to, in a manner of speaking, let a little of the air out of that which the essayist has stated. I am afraid I cannot fulfill these requirements in discussing Dr. Witherspoon's paper. I do not disagree with anything he has said. "THE CARE OF THE PHYSICIAN'S SKIN" implied to me a subject in which problems peculiar to the physician would be discussed. A considerable amount of this paper has dealt with a problem, that of therapeutic dermatitis, which is not limited or peculiar to the physician. I wish

Dr. Witherspoon had devoted more time to discussing such phases of occupational dermatitis, as contact dermatitis from novocaine and other materials of that sort. I certainly agree with him in everything he has said about the hazard and sequelae of carelessness in handling X-rays. Perhaps there is one point about which we differ. As physicians, we are constantly exposed to infections of all sorts, respiratory infections as well as skin infections, and the fact that we contract disease so seldomly from contact with our patients is striking testimony of the effectiveness of our protective barriers and mechanisms of resistance. Granting that skin infections occur perhaps with more frequency in the physician than in the banker or attorney, I believe that, considering the infinitely greater exposure which the physician has as against that of the banker or lawyer, we develop infections very infrequently. I know of no way to measure accurately this sort of impression.

Effects of Cortisone, Hydrocortisone and Corticotropin on Lipemia, Glycemia and Atherogenesis in Cholesterol-fed Chicks. J. Stamler, R. Pick and L. N. Katz. *Circulation* 10, 237, 1954.

In this paper and the two which follow (*Ibid.* 247, 251) the Atherosclerosis Research Team of the Cardiovascular Department, Medical Research Institute, Michael Reese Hospital, Chicago, continue their reports of studies in experimentally induced atherosclerosis.

Human beings with hyperadrenocorticism frequently develop premature severe atherosclerosis. This fact assumes new importance at the present time when hyperadrenocortical states are being artificially induced for therapeutic purposes. Experiments were designed to study this possibility. The Michael Reese Group have developed standardized techniques which produce anatomical lesions in experimental animals closely resembling those of the human disease. Such techniques were employed in this study of the modifying effect which might be produced by these hormones. Despite hydrocortisone induced (compound F) diabetes and enhancement of hypercholesterolemic hyperlipemia, no intensification of aorta or

coronary atherogenesis supervened. Long acting corticotropin had a similar effect. However, cortisone in large doses did result in moderate intensification of aorta and coronary atherogenesis in association with moderate hypertensive effects induced by this corticoid in chicks. Estrogen prophylaxis of cholesterol induced coronary atherogenesis in cockerels is not impaired by concomitant administration of adrenal steroids or ACTH. It further was found that mature egg producing hens, intact or with ligated oviducts, are markedly resistant to cholesterol-induced coronary atherogenesis. This inhibition of coronary atherosclerosis is apparently effected by the endogenous estrogen secretion of these female birds.

These further explorations of the ability of estrogen to protect against the development of coronary atherosclerosis first reported by this group several years ago lend further support to their presumptive conclusion that estrogens may play a key role in protecting premenopausal women against coronary atherogenesis. (Abstracted for the Middle Tennessee Heart Association by George R. Meneeley, M.D., Nashville.)

The variability of the clinical manifestations and course make the diagnosis of disseminated lupus an intriguing possibility whenever there is disease of multiple body systems.

CHANGING CONCEPTS OF ACUTE SYSTEMIC LUPUS ERYTHEMATOSUS

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In 1895 Osler emphasized the occurrence of visceral lesions in exudative erythema and indicated that lesions of the internal organs could occur in the absence of skin lesions. Recent studies utilizing the L. E. cell (lupus erythematosus cell) phenomenon have validated these concepts and have broadened the clinical spectrum of acute systemic lupus erythematosus. The purpose of this communication is to indicate the extent to which our concepts of the disease have broadened and to point out by case illustrations the manner in which this disease may simulate many other disease processes.

Hargraves described the L. E. cell in 1948. He described acidophilic bodies in polymorphonuclear leucocytes in the heparinized bone marrow of patients with acute systemic lupus. A few months later Haserick and

Sundberg reported similar observations. Subsequently, many technics employing bone marrow and peripheral blood of patients with acute systemic lupus erythematosus have been devised. The basic objective in all of these different technics is to bring the plasma or serum of the patient in contact with the white blood cells of the patient or the white blood cells of a normal individual or an animal (Figure 1, A). Haserick, utilizing electrophoretic partition of the plasma proteins, has shown that the L. E. factor resides in the gamma globulin fraction. It has become apparent that anti-coagulants are not necessary for the formation of the L. E. cell. Recent studies at the Mayo Clinic indicate that the formation of the L. E. cell is facilitated by the process of coagulation.

Specificity of Positive L. E. Tests

False positive L. E. tests have been observed. Recently a rheumatic syndrome

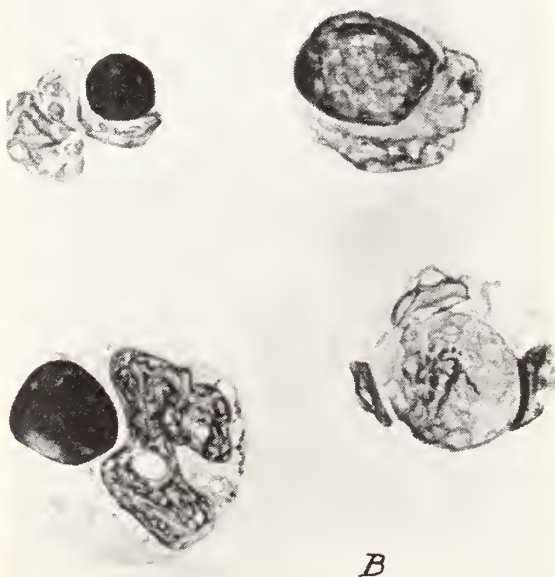
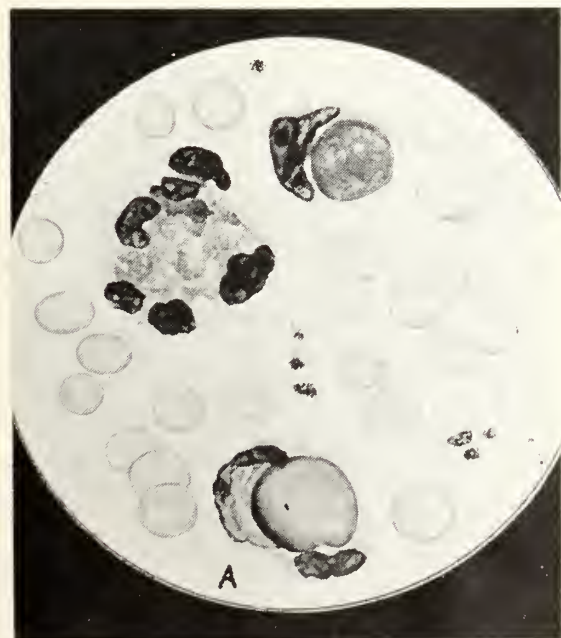


FIG. 1. (A) L. E. cells and L. E. rosette. (B) Phagocytized nuclei (tart cells); these are often confused with L. E. cells. (Water color paintings by Doris McGowan. Courtesy of Dr. L. W. Diggs.)

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resembling acute systemic lupus has been reported in patients receiving hydrazinophthalazine (Apresoline) in which a positive L. E. test is present. In these patients discontinuance of the drug results in subsidence of the syndrome. The L. E. phenomena has been demonstrated in patients with penicillin hypersensitivity. Its occurrence has been reported in pernicious anemia, hemolytic anemia, leukemia, multiple myeloma, miliary tuberculosis, and dermatitis herpetiformis. Some reports suggest a relationship of the L. E. phenomena to fungal infections. Many of these reports, however, are incomplete as regards clinical course and subsequent L. E. studies on these patients.

Despite the occurrence of false positive tests, the L. E. phenomena occurs with considerable regularity in patients with acute systemic lupus and its use frequently permits an exact diagnosis in patients in whom the clinical picture is quite obscure. It should be remembered that morphologic structures resembling L. E. cells occur and that they should be differentiated from the L. E. cells with great care particularly in patients in whom the clinical picture is not compatible with systemic lupus. (Figure 1, B.)

Various Manifestations of Lupus

With increased use of the L. E. test more cases of acute systemic lupus are being recognized. It has become apparent that many cases of systemic lupus masquerade for long periods of time in subdued form under the guise of many diagnoses. The incidence of convulsive disorders varies from 15-25 per cent in different series of reported cases. Systemic lupus may mimic acute rheumatic fever. It was found by Dubois that acute systemic lupus was half as frequent as acute rheumatic fever in 1950-1951 in the Los Angeles County General Hospital where the L. E. test was widely employed in the diagnostic approach to the disease. Anemia, leukopenia thrombocytopenia, polymyositic and polyneuritic nodules, auto-immune phenomena, Raynaud's phenomena, rheumatoid arthritis-like pictures, dysplenism, nephrotic syndrome, false positive serologic tests for syphilis and electro-encephalo-

graphic abnormalities may occur in this disease. Dubois reported three patients, two of which did not benefit from splenectomy, in whom the presenting picture was that of hemolytic anemia.

One encounters an interesting alliteration of P's in the clinical and laboratory findings which characterize this disease. Their incidence in a given patient will increase with the period of observation. These are of aid in recognizing and remembering the clinical syndrome. Table I indicates the incidence of these findings in a series of 13 cases studied by the author.

Table I

THE THIRTEEN P'S IN LUPUS INCIDENCE IN 13 CASES

1. Polyphasicity	12
2. Polyarthralgia	12
3. Polyserositis	6
a. Pleural pain	4
b. Pleural effusion	4
c. Pericarditis	2
d. Pericardial effusion	1
e. Peritoneal pain	5
f. Peritoneal effusion	6
4. Pyrexia	12
5. Polycytopenia	12
a. Leukopenia	12
b. Anemia	12
6. Photosensitivity	12
7. Pleomorphism of skin lesions	12
8. Plasma protein alterations	12
9. Proteinuria	12
10. Pyuria	12
11. Psychomotor disturbances	4
12. Peri-arteritis	0
13. Polymyositic and perineuritic nodules	0

Most dermatologists seem to agree that the chronic discoid and subacute disseminated forms of the disease can become converted to the acute systemic phase of the disease. The polyphasicity of the disease is thus apparent. (Table II.)

Table II

CLASSIFICATION OF LUPUS ERYTHEMATOSIS

1. Chronic discoid lupus.
 - a. Localized.
 - b. Disseminated.
2. Subacute disseminated L. E.
3. Acute disseminated (systemic or visceral) L. E.
 - a. With skin lesions.
 - b. Without skin lesions.

The work of Klemperer and co-workers emphasized the widespread involvement of the collagen tissues, although the collagen changes which they described are not invariably present. The tendency to catego-

rize this disease as a collagen disease should be discouraged. The widespread involvement of the collagen or supporting tissues, however, does explain its protean manifestations, particularly those findings and symptoms referable to the serous membranes and occasionally to the endocardium as in Libman-Sacks endocarditis. Histochemical studies of the hematoxylin staining bodies in the cardiac lesions in Libman-Sacks Disease and of the acidophilic structures in the L. E. cells indicate that the nucleic acid in these structures is in a depolymerized state. These studies indicate that one of the changes in this disease is disturbed nucleic acid metabolism in which there is a depolymerization of the desoxyribose nucleic acid. These changes together with the photosensitivity, uniqueness of the tissue response, distribution of lesions, sensitivity to banal infection and injuries and precipitation of crises by bacterial infections suggests a physiochemical basis for the disease. This explanation is further strengthened by the frequent presence of allergic disorders and auto-immune phenomena.

Case 1. The following is a tabular portrayal of five hospital admissions of a colored female patient with a subdued form of the disease who was observed from the age of 17 until her death at the age of 24.

First hospital admission at the age of 17:

1. Convulsive seizures for 6 years.
2. Fever without leucocytosis.
3. Headache.
4. Positive blood and spinal fluid serologic tests for syphilis.
5. Neurological examination—negative.
6. Pneumoencephalographic studies—negative.

Diagnosis: Idiopathic epilepsy

Second hospital admission:

1. Nephrotic picture.
2. Fever without leucocytosis.
3. Lymphadenomegaly.
4. Doubtful serologic test for syphilis.
5. Hypoproteinemia with reversal of albumin-globulin ratio.
6. Moderate micropyuria and microhematuria.

Diagnosis: Nephrotic phase of chronic glomerulonephritis.

Third hospital admission:

1. Nephrotic syndrome.
2. Fever without leucocytosis.
3. Nausea and vomiting.
4. Abdominal pain and rigidity with pattern consistent with acute appendicitis.

5. Slight hyper-pigmentation and thickening of skin over butterfly area of face.

The surgical consultant believed the picture to be consistent with *acute appendicitis* and recommended laparotomy which yielded a normal appendix.

Fourth hospital admission:

1. Nephrotic syndrome.
2. Fever without leucocytosis.
3. Headache.
4. Tinnitus and diminished hearing at the right side.
5. Bilateral papilledema.

Studies to incriminate cerebral neoplasm negative.

During this admission the patient developed peripheral skin lesions whose morphologic appearance was consistent with *lupus erythematosus*. Sternal marrow studies yielded L. E. cells.

Fifth hospital admission:

1. Nephrotic syndrome.
2. Hyperpnea.
3. Hyperpyrexia.
4. Acidosis and azotemia.
5. Death in uremia.

Comment. The disease existed in this patient for a period of 7 years. During this period the clinical picture simulated idiopathic epilepsy, nephrotic phase of chronic glomerulonephritis, acute appendicitis and intracranial neoplasm.

Case 2. A 43 year old colored female was admitted with pain, swelling and redness of the ankles and legs, mild fever, leucopenia, and lassitude. No skin lesions or laboratory abnormalities were noted. The clinical picture was thought to be that of the edematous stage of scleroderma, scleredema or atypical rheumatoid arthritis. During a subsequent hospital admission L. E. studies on the bone marrow disclosed the presence of L. E. cells. A remission was induced with cortisone acetate which lasted several months. The patient was in an acute lupus crisis at the time of her third hospital admission from which she did not recover.

Case 3. A 56 year old white female was admitted with the clinical and radiographic pictures of rheumatoid arthritis. About 4 months prior to admission herpes zoster ophthalmicus occurred. Subsequent to that she experienced increased malaise, alopecia of the scalp and eyebrows, leucopenic low grade fever, and skin lesions of the "V" of the neck and butterfly areas of the cheeks. Laboratory studies, in addition to the leucopenia, revealed a reversal of the albumin-globulin ratio, elevation of the sedimentation rate and a moderate normocytic, normochromic anemia. X-ray studies of the hands, ankles, knees and spine revealed characteristic roentgen changes of rheumatoid arthritis. Peripheral blood studies revealed L. E. cells.

Comment. One can only conjecture regarding the relationship of rheumatoid arthritis and lupus erythematosus in this patient. She had pursued a clinical course consistent with rheumatoid arthritis for 12 years and the roentgen and physical features of rheumatoid arthritis had evolved. Whether or not this is an instance of rheumatoid arthritis complicated by subacute lupus erythematosus or an instance of the latter from the outset cannot be determined at present. These two diseases exhibit several symptoms and laboratory findings in common which suggests similar etiologic mechanisms.

Case 4. A 24 year old colored female was admitted with polyarthralgia with objective joint changes, normocytosis with fever, bilateral pleural effusion and electrocardiographic abnormalities consistent with myocarditis (Figure 2). No skin lesions were present at the time of this admission, although evanescent skin lesions had been present about 6 months previously. The admitting diagnosis was acute rheumatic fever with rheumatic myocarditis and cardiac insufficiency. L. E. determination on the peripheral blood yielded L. E. cells. The patient displayed a good response to steroid therapy. Death occurred about 6 months later at another hospital with a nephrotic syndrome.

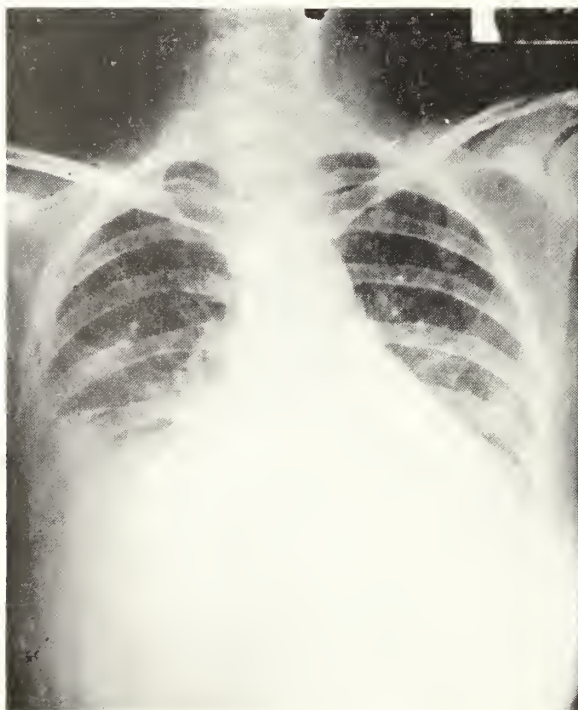


FIG. 2. Note enlargement of cardiac silhouette and right pleural effusion.

Case 5. A 33 year old colored female was admitted to the obstetric service in the sixth month of gestation with pain and slight swelling of all joints. Leucopenic fever was present. Abortion occurred despite anti-abortion measures. An L. E. determination on the peripheral blood was positive. The patient was transferred to the medical service where bronchopneumonia developed which was accompanied by a leucocytosis with neutrophilia. Death occurred despite cortisone therapy.

Comment. It is of interest that lupus erythematosus developed in this patient in the presence of pregnancy. Inasmuch as pregnancy attenuates rheumatoid arthritis there was reason to suspect lupus erythematosus instead of rheumatoid arthritis which the admission picture otherwise simulated. Also this patient demonstrates, as many have observed, that these patients can respond with leucocytosis in case bacterial infections occur.

Case 6. A 31 year old colored female was admitted with polyarthralgia, slight peri-orbital edema, moderate fever and malaise. X-rays of the joints were negative. Laboratory studies revealed pyuria and a white blood count varying from a leucopenia to a leucocytosis. Hyperpyrexia, chest pain in the lateral precordial and sub-sternal areas and a pericardial friction rub developed concomitant with leucopenia (Figure 3). An

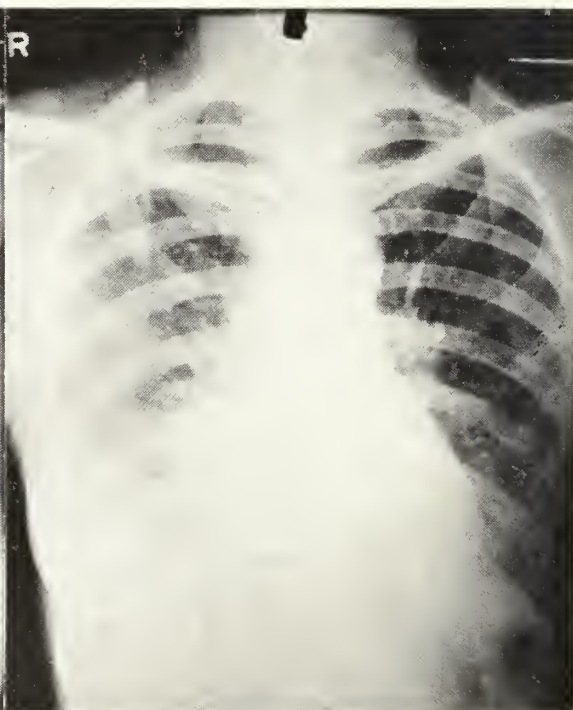


FIG. 3. Enlargement of cardiac silhouette and infiltration in right lung base. Pericardial friction rub present.

electrocardiogram revealed changes consistent with pericarditis and serial chest X-rays revealed enlargement of the cardiac silhouette with subsequent reduction to normal size as the clinical picture improved. The remission in this patient occurred without benefit of steroid therapy and the patient was relatively asymptomatic 3 years later.

Case 7. A 20 year old colored female was admitted with fever, arthralgia, pleural effusion, pleural pain, neutrophilic leucocytosis, normocytic normochromic anemia, marked cardiac enlargement, pericardial friction rub and electrocardiographic findings of first degree heart block and minimal T wave and ST segment changes. The admission diagnosis was acute rheumatic fever with pan-carditis and cardiac insufficiency. L. E. determinations on the peripheral blood were positive for L. E. cells. No skin lesions were noted at any time and no urinary abnormalities were noted. The patient responded well to cortisone therapy.

Case 8. A 30 year old colored female had been treated with adrenocorticotrophic hormone three months previously in another hospital. When first seen this patient reported pain and swelling of her joints and anorexia and weight loss. An infiltrative process was noted in the upper lobe of the lung which cleared concomitantly with the administration of penicillin. At the time, the patient had a neutrophilic leucocytosis with a shift to the left. Subsequently, the patient developed scattered maculopapular lesions on the extremities and one cytooid body was noted in the left ocular fundus. An L. E. determination on the peripheral blood was positive. Cortisone acetate was given with good clinical response. It is possible that bacterial pneumonia precipitated the acute phase of the disease in this patient.

During a subsequent admission the patient was experiencing pleural and pericardial pain, arthralgia and fever. Electrocardiographic changes consistent with pericarditis were noted. Peri-orbital edema was noted and two cytooid bodies were noted in the left fundus. An L. E. determination was done by placing a specimen of pleural fluid with the buffy coat of white blood cells from the peripheral blood revealing occasional L. E. cells. The patient again responded to cortisone acetate. This illness extended over a period of about 1 year. Leucopenia was noted on two occasions.

Case 9. A 24 year old colored female was admitted with low grade fever, pain in the joints, leucopenia, proteinuria, and an eruption in the butterfly area of the cheeks. A serologic test for syphilis was positive through 10 Kahn units. The diagnosis was subacute lupus erythematosus and a good response to cortisone therapy occurred. It would have been of interest to do a treponema immobilization test on this patient's serum with a view to determining whether or not this was a biologic false positive test for syphilis. She had received penicillin therapy for syphilis prior to admission.

It is apparent from the foregoing patients

that the clinical symptomatology in acute systemic lupus is protean. The varied clinical expressions are indicative of widespread involvement of mesenchymal tissues. Positive serologic tests for syphilis in the absence of clinical or historical evidences of treponemal infections, convulsive seizures, Raynaud's phenomena, picture of hypersplenism, hemolytic anemia, rheumatoid syndromes, and chronic discoid and subacute lupus erythematosus should be regarded as clinical prodromata or manifestations of the acute or subacute systemic phases of the disease. The presence of any one or a combination of these in a female patient in the reproductive era render it imperative to exclude lupus erythematosus. It should be remembered that the system involvement varies from patient to patient and that different systems may bear the brunt of the attack in different exacerbations in the same patient. Some patients die from uremia secondary to specific lupus nephropathy. Other patients die in an acute lupus crisis with little or no impairment of renal function. Convulsive seizures, polyneuropathy, pseudo-tumor syndromes, psychosis, and even paraplegia and hemiplegia may reflect central or peripheral nervous system involvement. The presence of "V"-area or facial skin lesions, ecchymoses, petechiae, pigmentary changes, alopecia or mucous membrane lesions in a patient who is obscurely ill should arouse suspicion of lupus erythematosus.

A positive serologic test for syphilis without anamnestic or physical findings to support a diagnosis of syphilis should be checked with a treponemal immobilization test, particularly if other features suggesting L. E. are present.

Table III
SYSTEMIC INVOLVEMENT IN TWELVE
OBSERVED CASES

Articular	100%
Central nervous system	25%
Cutaneous	75%
Renal	100%
Hematopoietic	100%

Relapses in the same patient may involve the same or different systems. In general, persistent or recurrent renal involvement portends a poor prognosis and makes uremia a likely mode of exit.

Pregnancy Complicated by Lupus

Pregnancy complicated by lupus erythematosus poses a problem. Ellis and Bereston, in an effort to study this problem, submitted a questionnaire to obstetricians and dermatologists regarding their experiences with pregnancy complicated by L. E. The fetal and maternal mortality were as shown in Table IV.

Table IV

FETAL AND MATERNAL MORTALITY IN PREGNANCY COMPLICATED BY L. E.		
	<i>Fetal Mortality</i>	<i>Maternal Mortality</i>
Acute L. E.	30%	25%
Subacute L. E.	46%	Little, if any

Treatment

There is no unanimity of opinion regarding treatment of the acute phase of the disease. Most patients benefit from steroid therapy. It should be recalled, however, that some patients undergo spontaneous remission and that steroid therapy is suppressive rather than curative. If cortisone or adrenocorticotrophic hormone is given the dosage should be sufficiently high to induce a Cushing disease-like picture and the usual precautions should be taken against metabolic or inflammatory complications. A careful watch and appropriate treatment of these complications appreciably reduce morbidity and thus permit the disease to pursue its natural course. The occasional relatively long duration of remissions justifies every effort to lessen morbidity and, if possible, therapeutically to induce remissions. Hydrocortisone is probably preferable to cortisone particularly in those patients with impairment of renal function because of its lesser tendency to retain sodium and water. Dosage during crises should be about 2 or 3 times that which is generally employed in the acute phase of rheumatoid arthritis. With this dosage potassium chloride at the rate of 1 gram twice daily should be given and a low sodium diet may be necessary if fluid retention occurs. Mercurial and acid diuretics may be used if renal function impairment does not contraindicate them. If hyperglycemia occurs, a diabetic diet and even insulin may be administered if the severity of

the patient's illness seems to justify continuation of steroid therapy.

After a clinical remission has been induced the steroid therapy may gradually be decreased to the dose which maintains the patient in a relatively asymptomatic state. Sometimes it is possible to discontinue treatment completely. A vigilant watch for inflammatory complications is imperative with large dose steroid therapy inasmuch as these preparations frequently put both the patient and the physician to sleep insofar as the physical evidences of complicating infections are concerned. These patients should avoid exposure to sunlight and other forms of physical trauma. Since bacterial infections may precipitate relapses, they should be watched for and treated with dispatch.

Favorable results from the use of large doses of estrogenic substances have been reported.

Indications for Steroid Therapy

Perhaps every patient should be given a chance to undergo spontaneous remission before steroid therapy is started.

The following are considered indications for steroid therapy:

1. Fulminant picture with hyperpyrexia, toxicity and debility (lupus crisis).
2. Progressive decline despite supportive therapy.
3. Frequent acute relapses.
4. A history of previous acute relapses during which remissions did not occur except with steroid therapy.
5. Persistent incapacitation due to symptoms which can be specifically ascribed to lupus.

Summary and Conclusions

The use of L. E. determinations has broadened our clinical concepts of acute and subacute systemic lupus erythematosus and has resulted in increased recognition of the disease. The disease is not as esoteric as once thought. Several cases are briefly presented which illustrate the protean manifestations of the disease and the extent to which it may simulate more commonly encountered clinical conditions. It is suggested that prodromata or suppressed expressions of the disease should be looked for and L. E. tests done when reasonable suspicion exists.

Multiple system involvements or alternate system involvement during successive exacerbations may occur. Studies are alluded to which indicate that the fetal and maternal mortality in acute systemic lupus are 30 per cent and 25 per cent respectively while the fetal mortality in subacute lupus is about 46 per cent with little, if any, effect on maternal mortality. Finally, it is suggested that treatment with steroid therapy with judicious attention to the metabolic and inflammatory complications, which may occur consequent to large dose steroid therapy, appreciably lessens morbidity and possibly lengthens survival time.

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The author discusses surgery for vertical squint.

SURGERY OF THE INFERIOR OBLIQUE*

ROLAND H. MYERS, M.D., Memphis

Surgery of the vertical muscles was infrequently performed until just a few years ago when Dr. James Watson White brought out the loose prism measurements of the vertical deviation in the six cardinal fields. This procedure gave us two important aids. First, it enables us to make a more accurate diagnosis of the vertical muscle or muscles that are paretic in a given patient. Second, it gives us a fair degree of measurements from which the amount of recession or resection of a particular muscle can be calculated. Further, you may recall that his greatest contribution to vertical surgery was popularizing the recession of the inferior oblique muscle in place of the myomectomy. His reasons were that by recession one could better gauge the amount of effect desired and not run the risk of crippling the inferior oblique as sometimes occurs when a myomectomy is performed. Also this procedure lessens the possibility of getting a complete paralysis of the elevators of the eyes when the superior recti are the paretic or paralyzed muscles, producing the resultant secondary deviation in the inferior obliques.

In treatment of the secondary deviation of the inferior oblique the following procedures may be used depending on indications: (1) glasses with prism correction for minor deviation; (2) staggered myotomy at its insertion in low degrees when the secondary deviation is not greater than 3 to 5 prism diopters in the primary field of action; (3) a recession at its insertion, the amount varying with the degree of secondary deviation; (4) myomectomy at its origin.

Prism correction is very rarely indicated, because where prisms will work the patient can probably tilt the head enough to be comfortable and free of diplopia, eliminating the need for prism correction.

When the secondary deviation is low, 3 to 5 prism diopters, in the primary field of

action of the inferior oblique muscle and associated with a lateral muscle defect that necessitates corrective surgery, particularly when it is on the external rectus, it is very easy to do a staggered myotomy of the inferior oblique at the same time of operation on the external rectus. This procedure works very effectively in such cases. By correcting the low vertical deviation, the ability of the patient to maintain parallelism of the eyes and develop strong fusion is improved.

When the secondary deviation ranges from 5 to 10 prism diopters in the primary field of action of the inferior oblique, a recession of 5 mm. usually works very well, and for deviations greater than 10 prism diopters recession of 10 mm. is very effective. In those cases in which there is a tremendous secondary deviation that rolls the eye well up under the brow, a myomectomy may also have to be performed on the inferior oblique muscles after a recession in cases of complete paralysis of both superior recti muscles, due to the marked hypertrophy of the inferior obliques, which develops when their yoke muscles are non-functioning.

Another point of advantage to the recession is that if the effect desired is not enough on the first operation, a second recession may be performed.

The myomectomy certainly has its place and when performed by an experienced surgeon good results are obtained. However, if too much of the muscle is removed it may render it almost functionless, and this is not as likely to take place with a recession. Also, when a recession is done, the identity of the muscle is more certain, and the inferior rectus is not so apt to be injured or cut as in a myomectomy.

In paretic or paralytic inferior oblique muscle conditions, the resection procedures often do not accomplish the desired effects, and in this situation it is probably better to direct the surgical adjustments to the direct antagonist (superior oblique) as a reces-

*Read before the Tennessee State Academy of Ophthalmology and Otolaryngology, April 19, 1954, Nashville, Tenn.

sion, and the yoke muscle (superior rectus) of the opposite eye in the form of a recession.

It has been debated as to whether the vertical or lateral surgery should be performed first in cases possessing a combination of vertical and lateral muscle paresis. When accurate measurements can be obtained with a cooperative patient a combination of both at the same time is the procedure of choice. An occasional patient has such a high degree of both lateral and vertical deviation that a correction of only one component at the first operation is advisable so that a better evaluation of the amount of surgery needed for the remaining deviation can be ascertained. The greatest deviation is corrected at the first operation.

When both eyes have inferior oblique muscles in secondary deviation, it is best to perform balanced surgery, recessing each inferior oblique. If only one inferior oblique is operated upon, the patient usually changes fixation, which increases the secondary deviation in the oblique muscle of the treated eye, necessitating operation of it at a later date.

CASES PRESENTED: (All measurements are in prism diopters.)

Case I—P.N., age 65

Dist 13 RH; Near 13 RH

4 exo, 20 RH 4 exo, 10 RH
Cp 5
4 exo, 15 RH 4 exo, 8 RH
4 exo, 13 RH 4 exo, 2 RH

Diagnosis: Paresis L10 with secondary deviation RSR

Treatment: Prism lenses: O.D. 6 pr. BD; O.S. 6 pr. BU

Case II—F.M., age 5

Dist 30 eso, 3 LH; Near 35 eso, 3-4 LH

30 eso, 15 LH 35 eso
Cp 3
30 eso, 7 LH 35 eso
35 eso 35 eso

Diagnosis: Paresis left ext; secondary contracture left int
Paresis RSR; secondary deviation LIO

Operation: 5 mm. recession left int
7 mm. recession LIO

Two weeks after operation:
20 eso Dist and Near

15 eso, No H 20 eso
15 eso 15 eso
Cp 4
15 eso 20 eso
No fusion. O.S. amblyopic.

Case III—L.B., age 4

Dist 40 eso, 8-10 LH, 8-10 RH

Near 40 eso, 8-10 LH, 8-10 RH

Not able to obtain accurate measurements in cardinal fields.

Diagnosis: Marked paresis RSR and LSR
Marked secondary deviation RIO and LIO
Paresis each externus
Secondary deviation and contracture each internus

First operation: 10 mm. recession each inferior oblique

9 weeks after first operation: Dist 40 eso, Near 40 eso

Second operation (3 months after first operation): 5.5 mm. recession of each internus

8 weeks after second operation:

No shift S&C

Slight overaction RIO upper outer field to left.
Reports fusion.

Case IV—B.W., age 6

Dist 4 eso, 7-10 LH; Near 7 LH

18 LH 5 RH
Cp 3
15 LH 3 RH
10 LH 2 RH

Diagnosis: Paresis RSR and LSR
Secondary deviation RIO and LIO

Operation: 10 mm. recession LIO

Nine months after operation

Dist 7 RH; Near 9-10 RH

6 RH 20 RH
Cp 3
2 RH 15 RH
1 RH 9 RH

True fusion.

10 mm. recession RIO has been advised.

Case V—J.A.J., age 10

Dist and Near 40 eso

30 eso 30 eso, 10 LH
Cp 3
30 eso 30 eso, 6 LH
30 eso 30 eso, 5 LH

Diagnosis: Paresis left ext with secondary contracture left int
Paresis RIO with secondary deviation LSR

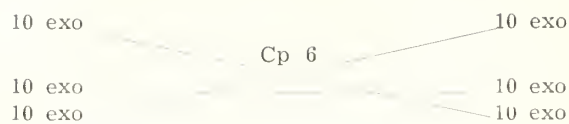
Operation: 3 mm. recession LSR

5 mm. recession left int

7 mm. resection left ext

One year after operation:

Dist and Near 10 exo



No fusion. O.S. amblyopic.

Case VI—B.J., age 4

Dist 18 exo, 9 LH; Near 30 exo, 9 LH

20 exo; 4 LH 20 exo, 9 LH

20 exo; 2 LH 20 exo; 5 LH

20 exo 20 exo; 4 LH

Diagnosis: Paresis RSR and RIO

Secondary deviation LIO and LSR

Paresis each internus

Secondary deviation each externus.

Operation: Resected left int 4 mm.

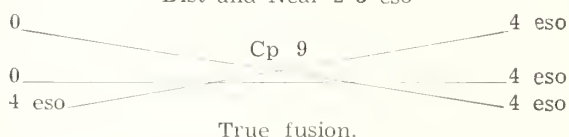
Recessed left ext 6 mm.

Recessed LSR 2 mm.

Staggered myotomy LIO

One year later:

Dist and Near 2-3 eso



Technique of Recession

The bulbar conjunctiva is opened in the outer lower quadrant ranging from the lateral border of the inferior rectus to the lower border of the external rectus muscle. Then Tenon's capsule is opened and a squint hook is passed downward against the sclera so that it slides between the sclera and the posterior surface of the inferior oblique muscle. The tip of the hook is then turned outward to the lower outer corner of the orbital rim and drawn upward against the orbital rim until the body of the inferior oblique is caught in the angle of the hook. The muscle is then dissected free from Tenon's capsule and a double arm 4-0 chromic suture is passed through the tendon before cutting the muscle free from its insertion. It is then sutured to the sclera in the same plane as its original direction of action. The conjunctiva is closed with a continuous plain-catgut 5-0 suture.

Conclusions

Recession of the inferior oblique muscle is not a difficult procedure. The amount of recession can be fairly accurately calculated in a majority of cases by prism measurement in the six cardinal fields. Very rarely does crippling of the inferior oblique muscle result from a recession. Those cases with fusion ability are greatly aided in obtaining

a good functional result if the inferior obliques are corrected along with lateral muscle deviations. (Kodachromes were shown to demonstrate inferior oblique conditions before and after surgery.)

I want to express my appreciation to Miss Jean Robinson for her orthoptic observations on these cases and for preparing the Kodachromes of cases presented.

Discussion

PHILIP M. LEWIS, M.D. (Memphis): During my training days I was taught to do a myotomy or a myectomy of the inferior oblique. I did them for more than 20 years and still do occasionally. Results were variable, some were excellent and some poor. The operation is quick and easy, but rather unreliable. It took a long time for me to decide to even try a recession. I felt that it was quite difficult and, due to the proximity of the macula and the posterior ciliary vessels and nerves, was a hazardous affair. Finally, the reports of many led me to try the procedure about ten years ago, but I never felt confident about it because I was doubtful of my ability to re-attach the muscle at the proper place. It is only within the past two years that I have had any confidence that I could recess the muscle in the proper line or plane. The work of Walter Fink is responsible for this and my results have been definitely better since using his instruments and his technic. Especially valuable is his localizer, which I call the Fink divining rod. His technic with diagrams is given in his book and in published articles. In closing I wish to say that I have a very high regard for Dr. Myers' ability to make a correct diagnosis and advise the proper procedure in vertical deviations. He has frequently been of great assistance to me in difficult cases. I freely admit that his careful and painstaking measurements are more accurate than I can make.

RALPH O. RYCHENER, M.D. (Memphis): Dr. Myers has clearly outlined the indications for surgery on the inferior obliques and has even had the temerity to advise certain amounts of muscle recession based on prism deviation measurements. This is something few other experts will do. Of course we realize that advice as to the amount of surgery necessary must always be relative, for actual conclusions must be reached when the muscles are exposed and are based on their size, tensile strength and manner of attachment to the globe. It is refreshing to have a surgeon consultant who will commit himself, and we feel we are very fortunate to have him in our office, for our surgical results in squints with vertical involvements have been much improved under his supervision.

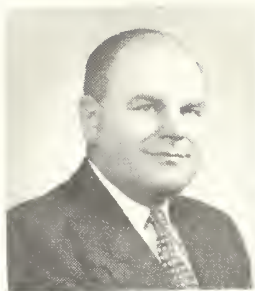
Duane, in an unpublished paper before the British Medical Association in 1906, was the first American oculist to manifest any interest in the

inferior oblique, and his writings were on myomectomy at the origin. For many years he was practically a lone wolf in the field. During my residency years I saw performed only one inferior oblique myomectomy and that was to correct a diplopia causing head tilt. Our chief indicated that vertical imbalance might be corrected with prisms up to four diopters, bases up and down, but that one suffered less grief as a clinician if he ignored them altogether. James White, in 1942, made a tremendous contribution to surgery for squint by demonstrating the technic of exposure of the insertion of the inferior oblique and its recession. Soon thereafter Dr. Myers came under his influence in a postgraduate class on extra-ocular muscles, was adopted as a protege and asked to spend some time in his private office where he made the most of his opportunities with the man who was then and still is recognized as the master authority on extra-ocular muscles. This good fortune has been reflected in our office and those of others who have used him as a con-

sultant. Several of my older friends were not particularly impressed when Dr. White presented his paper, but when I related our satisfactory experience with inferior oblique recession, at least one indicated that he needed to review the situation and depend more on prism deviations as a guide in his surgery for squint. Many still do little or no "vertical surgery" but almost every case of divergent squint will have some vertical component and, if carefully worked out, it proves to be enough for surgery and the end results will be most gratifying.

Dr. Myers has mentioned that occasionally myomectomy at the origin must be added to recession at the insertion to obtain a perfect result. He likewise emphasized the occasional complication of injury to the inferior rectus during the former surgical procedure. I should like to express my personal thanks to Dr. Myers for the aid he has given me in this field in the past and for that which I hope he will render in the future.

President's Letter



DR. THOMPSON

Some considerable confusion has arisen over the subject of professional risk insurance for physicians. A generalized national increase in malpractice actions, together with the apparent trend of higher judgments awarded by juries, has caused policy changes among insurance companies. The majority have organized to agree upon a standard policy, uniform acquisition practices and equal premium rates. In brief, these companies set rates for each state according to the experience within the state.

The first comment is that every physician should carry some form of insurance protection for each day he is in practice. For the great majority, this will never be needed, but its service is not only protection against carelessness but principally to cover suits for situations that are completely beyond the physician's control.

Secondly, the individual physician should determine for himself how much insurance he wishes to have and what company he proposes to select for his protection. Physicians who are entering practice might profit from consulting with established physicians regarding local customs and experience. Philosophy upon the subject will vary. Some will want high limits to protect their personal property against loss by court action. Others will argue that careful defense and low limits will serve to reduce the size of the judgments. This decision should be based upon personal preference.

One theory holds that high limits invite suits and subsequent high judgments. The other declares low limits to leave the doctor vulnerable to personal loss. One holds that careful attention to details and thorough defense preparation practically eliminates this danger and argues that experience proves this to be true. The other theory simply denies that statement and speaks of hazards that accompany less than full financial security. One says they have proved the soundness of their position, the others ask what about tomorrow. Low limit advocates tend to credit those holding the other theory with a considerable responsibility for the present situation while they in turn argue that the present situation pre-

sents additional proof for the need of carrying high limit protection.

One theory holds that the plaintiff is more interested in serving the impersonal insurance company than the doctor but that also is argued against. High judgments are contagious. One such action frequently results in other cases being filed in the area, but again, the argument can be turned both ways. So, again, this discussion is not intended for advice on the question of amount. The important thing is that the physician carry insurance, how much and what company should be decided by himself.

Regardless of this choice there are many things a physician may do to prevent his becoming involved in legal activities of this type. Of primary importance among these are the advice that careful attention to the practice of sound, scientific, medicine and conscientious adherence to the principles of ethics represent the best possible protection. An attempt has been made by most county and state medical societies to eliminate if possible the basis of complaint or disagreement by patients by the establishment of mediation boards or grievance committees as permanent fixtures in their society set-up. Recent surveys of the reports of such committees in several states have convinced many of us that the one underlying reason which prompted most of the complaints and subsequent legal actions was the complete lack of understanding by the doctors of the *Principles of Medical Ethics*.

This lack of understanding is a result of misinterpretation of the ethics, lack of knowledge of the ethics and in many instances lack of opportunity for young doctors to scrutinize or receive instruction in medical ethics.

The Tennessee Ten recognized this fact and requested the medical schools of the State to include a course in medical ethics. This has been neglected until we have grown a generation of doctors to whom the word medical ethics is foreign. Constant and watchful care must be maintained at all times regarding our remarks and actions concerning ourselves, our patients and our fellow practitioners.

A handwritten signature in dark ink, appearing to read "J. Thompson", written in a cursive style.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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OCTOBER, 1954

EDITORIAL

THE ABUSE OF THE LABORATORY

Science has provided medicine with a wide variety of laboratory tests which may be most valuable tools in the management of certain cases. The most difficult thing for the physician is to keep the laboratory and its results in the proper perspective in relationship to his work. For most doctors it takes a conscious effort to curtail the amount of laboratory work ordered or done in a given case. So too, it requires self confidence in one's judgment and experience to question the significance, or even the accuracy or veracity of laboratory results if they appear to be contrary to clinical experience or judgment. The figures of so many milligrams or grams, or per cent of this or that are so objective and concrete that the physician who lacks confidence in his judgment will perforce accept the results and try to fit the case study to these concrete findings.

Trumbull's¹ paper in this issue and

Hughes' discussion briefly but clearly portray the laboratory and its place in medicine, indicating the fallacies which have grown up about the acceptability and value of certain laboratory tests, especially in the absence of essential clinical data. The great value of this paper is that it offers a brief but critical review of the laboratory procedures used in everyday practice. Everyone who is busy in practice comes to use the laboratory in a more or less routine fashion, and orders this or that test often as a kind of automatic move. It is for this reason that the doctor should stop every once in a while and reorient himself in what he does and to reacquaint himself with regard to the technical aspects, the shortcomings and above all the applications of laboratory tests to his clinical case studies.

In the first place have we as physicians familiarized ourselves with laboratory techniques sufficiently to get the greatest help from them? Do we know, for example, that if we are looking for certain infectious agents in excreta or in body fluids specific culture media must be used, or that slow growth requires holding cultures longer than the routine period? If we know these facts we will acquaint nurse, intern or whoever makes out the requisition of what we are looking for. Possibly the negative report was on improperly selected material for culture.

The fallacies in the hematologic field have been clearly pointed up by Trumbull. The well recognized variability in red cell counts has led to the discarding of them for the packed cell volume or hematocrit, except for the estimation of cell indices, in more and more hospitals during the past decade. An adequate method of determining the hemoglobin, properly done, and the simple packed cell volume, if done with a centrifuge having the proper r.p.m., provide the basic information for the diagnosis of anemia, and in most instances the type of anemia,—macrocytic, normocytic or microcytic. The limitations of bone marrow studies has been indicated not only by Trumbull but also recently by Andrews.²

¹Trumbull, M. L.: The Abuse of Laboratory Procedures: with Special Reference to Hospitalized Patients, J. Tenn. M. A. 47:389, 1954.

²Andrews, G. A.: The Clinical Use of Bone Marrow Study, J. Tenn. M. A. 47:361, 1954.

Trumbull has emphasized the limitations and fallacies in interpretation in these items and others. His paper demands careful reading and so does the discussion.

The author is speaking of results in the laboratory under the direction of a competent clinical pathologist. How many times are the fallacies multiplied in the hands of the incompetent "lone wolf" technician or even in one "trained" and yet lacking the basic knowledge to apply techniques, especially in the field of biochemical determinations. It was the latter which prompted the editorial³ on "Cook-book" Laboratory Work some years ago. Unless laboratory technics are rigidly adhered to, and unless results are doubly checked, if "out of line," the doctor must be doubly cautious in his interpretation of the numbers appearing on a laboratory report slip.

R. H. K.



TENNESSEE'S THANKS TO THE COMMONWEALTH FUND

The following excerpt is from a letter addressed to Dr. B. M. Overholt, Chairman of the Committee on Health and Medical Care of the Tennessee Medical Foundation, and signed by Mr. Malcolm P. Aldrich, President of the Commonwealth Fund.

"It gives me pleasure to inform you that the Executive Committee of the Commonwealth Fund has made an appropriation of \$19,500 to the Tennessee Medical Foundation toward its total budget of \$27,700 for administrative expenses for the eighteen months beginning August 1, 1954.

"I think you will be interested to hear that the Committee members commented very favorably on the accomplishments which the Tennessee Medical Foundation has made and the splendid cooperation and backing of all the local organizations involved. We hope your planning and organization of programs for the improvement of medical care in the distressed areas of your State will continue satisfactorily and that after the eighteen months the areas will be so convinced of your work that they will become self-supporting, as you have expressed the hope."

Thus again we have the evidence of the continued interest of the Commonwealth Fund in Tennessee Medicine. The members of the State Association should be re-

minded at intervals of the aid it has obtained from this source in its professional advancement and provision of facilities for better work, all of which redound to the citizenry of the State in a higher level of medical care.

The monies expended for Tennessee Medicine have surely met the objective, "To do something for the welfare of mankind," the goal set in the establishment of the Fund in 1918 by Mrs. Stephen V. Hardness.

The Fund's interest in promoting better professional care in rural areas led to the postgraduate training of some 85 general practitioners in summertime courses at Vanderbilt University Hospital. Those chosen received four months of training, being paid a monthly stipend by the Fund while away from their practice. This activity was carried on from 1930 to 1942.

In 1937 the Tennessee State Medical Association instituted its postgraduate courses, a travelling lecturer visiting all areas of the State. This was made possible only through the annual contribution of \$10,000.00 from the Commonwealth Fund with contributions from the Department of Public Health, Vanderbilt University School of Medicine and the University of Tennessee College of Medicine. The Fund made its contributions until the course was well established and since 1951 it has been underwritten in the main by the State Association.

The contribution of The Commonwealth Fund to public health in Tennessee cannot be measured only in terms of the large sums given to this development. The Fund originally financed the field technical services which surveyed and developed public health activities; after four years the State began to take over the costs of this at 25 per cent a year for the next four years. An epidemiologist for the State was financed on the same basis by The Fund, which also made contributions to the dental service. The Commonwealth Fund during these years set up demonstration local health services in Rutherford, Gibson, Sullivan and Sumner Counties, carrying the major financial burden for the first four years, after which the counties assumed the financial responsibility at the rate of 25 per cent a

³Editorial: "Cook-book" Laboratory Work, J. Tenn. M. A. 44:351, 1951.

year for four years. The Fund built and gave to the counties modern and model public health buildings. It set up and carried out a pneumonia and tuberculosis study in Sumner County, later taken over by the County and State.

Rutherford and Sullivan Counties had given to them hospitals financed by The Commonwealth Fund.

In the Annual Report of 1953 of the Commonwealth Fund appears a significant paragraph:—"As part of its broader objectives in furthering the health of the public, the Fund is also supporting experimentation directed toward improvement in community health service, medical research which may lead to a better understanding of the human organism and its environment, and advanced training for individuals sharing responsibility for preventing and alleviating illness. - - -"

It is the philosophy expressed in this paragraph which undoubtedly led the officers of the Fund to provide the money for the initiation of the Medical Health and Care Program of the Tennessee State Medical Association. The Fund had frequently provided funds for programs of state health departments and medical schools and other agencies. But those of us who had the privilege of laying the Association's problems and hopes before the Board of the Fund had a feeling that at least some of them had a suppressed astonishment at a constructive proposal coming from organized medicine. It may have been that some members of the Board were intrigued by this idea and were stimulated to lend a hand. In any event the Board of the Commonwealth Fund came through magnanimously and entrusted monies to the Medical Foundation for its activities.

Without extensive research for absolute accuracy, your Editor feels that, if this is not the first time, it is one of the very few times that private philanthropy has entrusted funds to a state medical association for an unselfish, constructive attack upon some of the socio-economic problems which plague the medical profession. Organized medicine has all too often taken an "agin" attitude and too infrequently has assumed

a leadership which is rightfully its responsibility.

The State's doctors and citizens should then thank the Commonwealth Fund for its past invaluable assistance, and its confidence in the profession in its newest venture. The Board of the Tennessee Medical Foundation and its Committee on Health and Medical Care ask for the moral and financial support from the Association's members so that the Commonwealth Fund's confidence in Tennessee may remain unshaken.

R. H. K.



Special Item

Our Executive Secretary presented the following discussion of prepaid insurance and the Tennessee Plan to the medical students at the University of Tennessee College of Medicine on September 17. Though much has appeared in the Journal about the subject in recent years, a summary such as this brings a lot of scattered facts together to give a rounded out picture.

—Editor.

The Tennessee Plan

J. E. Ballentine, Executive Secretary
Tennessee State Medical Association

(Presented to Medical Students At U. T.
in Memphis)

If the present trends in paying hospital and doctor bills by insurance continues in whole or in part, it is reasonable to believe that at least one half of your professional income will be in the form of insurance payments. It could be more. This salient economic fact should attract interest in the Tennessee Plan and in the whole subject of prepaid health insurance. With the number of health insurance contracts ever increasing and covering more and more procedures in the health field, it is reasonable to believe that an even greater percentage of income may be just around the corner for doctors attending patients with health insurance.

To understand the present-day situation in the prepaid health insurance field, a bit of research is necessary. Take a look at some of the professional, political, social, and economic factors which account for

the present-day popularity and the trend of prepaid plans.

The medical profession, perhaps unknowingly, has been a principal source and stimulant for prepaid insurance. As you know, the remarkable progress in the science of medicine in the past few decades has created an unprecedented demand for medical services of a high quality and it has increased greatly the cost of that service. The public is well aware of the quality of the medical profession's services and every man in America today desires this kind of medical care for himself and his family—and at a price he can afford to pay.

Medical care, which you as future practicing physicians will deliver, is a very purchasable service. You, those doctors now in practice, and your organized medical societies can well afford to be concerned with the impact of prepayment which is destined to play an ever-increasing role in the economics of medicine and the welfare of this land.

The die has largely been cast for prepaid health insurance plans and its casting has been done to a great extent by older physicians who in a large part have not had to depend too greatly upon prepaid insurance since their financial position was largely unaffected by this measure. This actual inexperience with the insurance factor in the economics of practice explains some of the lethargy and disinterest among older physicians in the subject. I think it most important that every medical student should use every resource for informing himself on this subject, and that he express his concepts to those who now have the destiny of prepaid plans in their hands.

Let us take a look at the political factors that have entered the prepayment picture. When the New Deal came into power a period of depression and despair existed. The vast political potency of federal subsidy, assistance, and outright doles was recognized and used. The 1940's was the period of a political give-and-take on the issue of "federal responsibility" for the welfare of citizens. Federal medicine, socialized medicine, or whatever you want to call it, became a perennial proposal before the Congress. By this time, it was clear

that the American People wanted health insurance, some wanted the compulsory variety with governmental administration—others wanted "Voluntary insurance." The A.M.A. came out strongly in favor of voluntary plans. The political aspects of the issue was forced in the Educational Campaign sponsored by the A.M.A. in 1950-51. It was thought to be settled in the Republican victory at the polls in the last national election. Such, however, has not been the case. In the 83rd Congress that just adjourned last month, something like 300 bills directly affecting medicine were introduced. The Department of Health, Education, and Welfare has been established under the present administration. This department, to some extent has been controversial among medical circles. The social factors in the prepayment picture are somewhat interwoven with the political. We now have tax supported medical education. There is a general increase in persons in secondary educational levels and there has been a great deal of publicity concerning "Doctor Cartel," and stories have appeared in National magazines on "How Much Should Your Doctor Charge?" and "Some Doctors Should Be In Jail." The past twenty-five years has witnessed a totally unprecedented interest in the social aspects of industry, commerce, and private enterprise generally. The practice of medicine, as we have known it, has been a major subject for social science students, with the economic planners doing the loudest shouting. None will dispute that medical care has important social implications and physicians must always remain cognizant of its social potency.

Of all the factors bearing upon the popularity and public demand for health insurance, none has been more determining than the economics involved. Some simple economic principles are clearly observed. I have already mentioned that John Q. Public wants good medical care and he wants to be able to pay for it. The HOW of paying for it is as important as the desire.

The depression saw many economic devices created for wooing the consumer dollar. Sellers of goods and services, in the face of dwindling purchasing power, were

hard pressed to keep above the flood of bankruptcy. Among the types of "economic stimulants" was the "partial payment" concept. Added to that was the "no down payment" and "many months to pay" propositions. These practices, coupled with unscientific budgeting, changed the buying habits of the Nation. Certainly you know that the installment plan and the budget is a permanent aspect of family economics today. The public is now accustomed to buying its home, its furniture, its insurance, and even its children's education on the installment plan. Why, the public asks, can't it pay for medical care that way, too? The fact is that it can. I will not take your time to show how little of the family budget has to be allocated to adequate health insurance premiums. However, it is one of the smallest amounts in any family budget, roughly 4 percent. Adequate hospital and surgical insurance for the whole family need cost no more than the equivalent of one or two packs of cigarettes a day.

Here's another important point in prepaying medical care costs. People do not want hospital and doctor bills. Most people have not planned in advance to pay for expensive illness out-of-pocket. In fact, a serious illness requiring surgery and hospitalization can knock the average family budget for a "loop." The difficulty of paying for these services after they have been incurred explains a lot of the complaints about the high cost of medical care. On the other hand, think how much better the doctor-patient relationship would be if the patient has no worry about paying the hospital and the doctor because he has adequate health insurance. Insured patients are better economic risks for the doctor. They offer better public relations when the subject of medical care costs come up around the bridge table or the coffee club.

The most widely held of the various group coverages at the beginning of this year were group hospital expense and group surgical expense protection, both of which covered nearly 34,000,000 persons. These two coverages also showed the greatest growth during the past year.

With 4,400,000 additional persons brought under the insurance companies' group surgi-

cal expense coverage in 1953, the total covered rose to 33,976,000, under 71,910 master contracts.

Group hospital expense insurance with the insurance companies saw 4,101,000 added in 1953 and, at the start of this year, covered 33,510,000 employees and dependents, under 69,990 master contracts.

Group medical expense insurance also grew rapidly in the past year, the 3,615,000 added bringing the total covered to 13,730,000.

Newest member of this protection family, —*group major-medical expense* coverage, added 510,000 persons in the year and covered 1,042,000 at the turn of the year, under 650 master contracts. This coverage which protects against catastrophic medical expenses has had the most rapid rate of growth of all group insurance plans, practically doubling in the single year.

Group accident and health weekly indemnity insurance covered 18,739,000 on January 1, under 217,500 master contracts; and *group accidental death and dismemberment* coverage included 11,834,000, under 57,190 master contracts.

As a result of the above factors, and others, the purchase of prepaid hospital, surgical and medical insurance has been phenomenal. Never in the history of the insurance industry have so many people bought so many contracts in so short a time. Statistics show us that at the close of 1952 nearly 100 million Americans had hospital insurance, 73 million had surgical insurance, and 36 million had medical expense insurance. The rate of increase over 1951 in hospital insurance was 7 percent; surgical insurance 12 percent; and medical insurance 29 percent. It is clear, then, that prepaid insurance is here to stay.

We must be concerned primarily with WHO writes it, HOW IT is written, and WHAT kind of a job it will do for medicine and the public. It should be remembered that the final judgment on the whole voluntary movement will be made by the public, not by physicians and hospitals. If voluntary plans, through experimentation, good planning, and continuous improvement do an adequate job, the proponents of a federal system of compulsory insurance, with its

attendant bureaucratic regulation and domination, will lose their most potent argument for a federal system of medical care.

Since the voluntary approach is in the ascendancy, it is interesting to note that the friends of the voluntary way are in somewhat of an argument over the BEST kind of voluntary insurance. In the 1940's the non-profit plans moved rapidly into the health insurance market. In fact, they rode along on what is generally admitted as an apathy and unwillingness to experiment with health insurance by the commercial insurance industry. The success of the Blue Shield movement, with strong doctor support and participation, caused a re-birth of interest on the part of the commercial carriers.

Blue Shield Plans, with their "service feature" and with many additional benefits as compared with prevailing commercial policies, were a most potent force in the spread of prepaid protection. Today, the Non-profit plans (Blue Cross-Blue Shield) carry 40 percent of the hospital insurance, nearly 50 percent of the surgical insurance and 60 percent of the medical care plans. Commercial insurance carriers are now back in the field competitively, and their policy provisions have taken on a "new look." This is not the place, however, to debate the merits of these two important approaches to the solution of the problem.

The remainder of my time will be given over to the Tennessee-Plan,—a system of prepaid surgical insurance sponsored by the Tennessee State Medical Association.

Early in the 1940's, while the storm of socialized medicine was really raging, the Tennessee State Medical Association, like most other state associations, studied the matter of adopting some kind of a prepaid program with doctor sponsorship and support. The Study Committee, pioneering in this field and without much precedent to guide them, began the long slow job of coming up with a plan. Basic principles were laid down, but the actual plan, whether commercially underwritten or sold by our own non-profit Blue Shield corporation which would have been financially un-

derwritten by doctors, was long in the making.

The result of almost interminable study and many meetings of the House of Delegates, was that the present plan was finally officially launched in July, 1949.

The Tennessee Plan is somewhat unique among plans sponsored by state medical associations. We use both the commercial and non-profit underwriter. The Association has laid down the requirements of the Plan—fee schedule, basic policy provisions, memoranda of agreements with underwriters, and contracts with participating physicians. Any carrier, either commercial or non-profit, by meeting the Association's requirements, can sell the Tennessee Plan. At present we have 36 underwriters,—34 commercial insurance companies and two non-profit associations.

We have approximately 1,700 participating physicians who have agreed to accept the insurance benefits as full pay for their services to insured persons within the income limits. These limits are \$2,400 annually for single persons, and \$4,200 annually for total family income. This means that the Tennessee Plan, irrespective of the agency selling it, is a "full service" plan for those in the eligible income limits. Other persons with higher incomes receive the insurance benefit in cash, but participating physicians are not obligated to accept the benefits as full pay for their services.

The Tennessee Plan was revised in 1952. The fee schedule was changed in many particulars including raising the maximum benefit from \$175 to \$200.

The Plan now has more than 760,543 (increase of 135,000 since January 1, 1954) enrolled. Within less than five years, it has become the predominant surgical contract in Tennessee. Two out of every three prepaid surgical policies in Tennessee are Tennessee Plan contracts. At the close of 1952 there were 937,000 surgical contracts of all kinds of existence.

The Tennessee Plan has attracted national attention. Many states have restudied their own plans on the comparative basis of the Tennessee Plan, and some states have adopted the Plan verbatim.

With the first revision now complete and

with the Plan having reached a mature, smoothly operating reality, we are now ready to give our attention to improving the Plan. Study on this matter is already under way, and representative committees from the specialties of Anesthesiology, Radiology, Pathology, and Medicine have met with the Insurance Committee of the Tennessee State Medical Association with suggestions wherein these additional specialties would be covered in the Tennessee Plan. This would involve adding these features to the existing plan rather than to disturb those policies already in effect. It will take long study and many hours of work to come up with a solution wherein these added features can be made an integral part of the plan. It must be remembered, as I have already stated, that voluntary insurance, including the Tennessee Plan, must demonstrate to the public that it can provide adequate, honest protection against the major financial risks of illness; that it is widely available, and that the premium cost is within the financial ability of the people to pay. We still have a long way to go as the problem is measured by these yardsticks.

I have only covered the high points of the Tennessee Plan, and the economic and social factors surrounding the entire prepayment health insurance field. I shall not state that I am expert on this subject, nor do I have all of the answers to questions that you perhaps have in mind. However, I will be delighted to answer any questions that you have time to ask and will furnish you with whatever answers that exist.

DEATHS

Dr. William H. Witt of Nashville died on September 1 at the age of 88 years of coronary thrombosis. He was the dean of the internists of Nashville having had his major interest in internal medicine for a half century and more,—an interest manifested by his frequent periods of reading in the Vanderbilt Medical Library even to a few days before death. With the background of a classical education, blessed with a sparkling sense of humor, being a discerning and able clinician and a master of unadorned exposition characterized by clarity and a beautiful choice of words, Dr. Witt as a teacher of medicine at

Vanderbilt University School of Medicine, left his imprint on many a student in the several decades during which he was active in teaching.

Dr. John T. Keeton, 71, of Clifton, died September 6 at Baptist Hospital in Nashville, having been ill for two weeks prior to his death.

Dr. Isaac R. Storie, 76, of Jamestown died of complications following an operation, September 1 at Campbell Clinic in Chattanooga. He practiced in Fentress County for 57 years.

Dr. Vernon Hutton, Sr., 77, of Nashville died September 4 at St. Thomas Hospital, after an illness of several months.

Dr. David Campbell Maddox, 74, of Union City died August 4 at the Obion County General Hospital.

Dr. Charles K. Lewis, 65, of Memphis died August 26 at Methodist Hospital, of a heart attack.

Dr. F. C. Carnell, aged 78, died August 8th at the Trezevant Clinic in Trezevant.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Chattanooga and Hamilton County Medical Society

The September 2nd meeting of the society consisted of a panel discussion on "Surgery of the Chest." Dr. Van Fletcher was moderator, the panel consisting of Dr. Foster Hampton, Jr., Dr. L. S. Whitaker, Dr. G. M. Francis, Dr. E. E. Reisman, Jr. and Dr. R. E. Baldwin. A case report was also given by Dr. Fred E. Marsh.

Memphis and Shelby County Medical Society

The scientific program at the August 3 meeting was a symposium on Toxemias of Pregnancy:—"Etiology" by Dr. A. A. Cox; "Pathologic Physiology" by Dr. J. W. Adams; "Treatment" by Dr. G. K. Rogers, and "Future Management and Prognosis" by Dr. H. P. James.

Members of the Society heard a symposium on Acute Renal Failure on September 7. Symposium speakers and topics were: Dr. R. L. Wooten, "Etiology and Pathologic Physiology"; Dr. P. E. Orpet, "Medical Management"; Dr. E. J. Spiotta, "Therapy By Dialysis."

Nashville Academy of Medicine and Davidson County Medical Society

Members of the Society met for dinner

at the St. Thomas Hospital on September 14. The program consisted of a report on 1954 activities by the academy president and committees. Dr. John R. Thompson, Jr., President of TSMA, was a guest speaker, reporting some of the activities now in progress by the Tennessee State Medical Association.

Consolidated Medical Assembly

The monthly session, on September 7th, was held at the New Southern Hotel where papers were given by Dr. K. W. Todd of Nashville, on "Plastic Management of Common Congenital Deformities" and by Dr. John Tudor, Nashville, on "Management of Recurrent Urinary Calculi."

Roane County Medical Society

The meeting on September 28 was a dinner meeting at the Oak Ridge Hospital. The subject of the program was "Blue Cross and You." Mr. Ben Haynes of the Tennessee Hospital Service Association, Chattanooga, and Mr. Victor Davis, Tennessee Hospital Service Association, Hospital and Professional Service Representative, Knoxville, led the discussion.

NATIONAL NEWS

Hill-Burton Money Bill Signed, Hew Starts Program Rolling

With the President's signature August 26 on the supplemental appropriation bill, Hill-Burton hospital construction officials in the Department of Health, Education, and Welfare began making allotments to the states under the newly expanded program. At the same time, discussions were begun with state H-B agencies on regulations required by Congress to carry out the program. Other groups, including the American Medical Association, also will be called in on the regulations, according to HEW. States will have available this year federal grants of \$6.5 million for hospitals for the chronically ill, \$6.5 million for diagnostic-treatment centers, \$4 million for rehabilitation centers, and \$4 million for nursing homes. Grants will be made on the basis of the regular H-B allotments (per capita income and population). Each state also is scheduled to get a minimum of \$25,000 for surveys of future needs; states must match this money. (Allocated to Tennessee:—\$546,000 total; \$161,000 earmarked for diagnostic treatment centers and chronic dis-

ease facilities; \$112,000 for rehabilitation facilities and nursing homes. (From A.M.A. Washington Letter)

Number of Physicians in U. S. Reaches New High

A record graduation of 6,861 physicians during the past year by our nation's medical schools has boosted the ratio to an all-time high of one physician for every 730 persons in the United States. This ratio will be lowered even more in the next few years as the number of medical graduates is expected to rise due to the continued expansion of the country's medical schools.

Today's physician population has now reached approximately 220,100. The record graduation figures were released in the 54th annual report on medical education in the United States by the A.M.A. Council on Medical Education and Hospitals.

Highlights of the report:

Enrollment of 28,227 is largest number of medical students in history of U. S.

Freshman class enrollment of 7,449 also is a record.

More than 76 million dollars was spent during 1953-1954 for new facilities, remodeling or completion of buildings for medical instruction.

Budgets for medical schools during 1954-1955 total more than 143 million dollars.

21,328 physicians did volunteer teaching without pay during the year.

Ten new four-year schools are in construction or planning stages and will be in operation within the next few years.

The 10 new four-year medical schools will be at the Universities of California, Mississippi, Miami, Missouri, Florida, West Virginia, Kentucky, North Dakota and Yeshiva University of New York and Seton Hall University. In addition, three other medical schools are being considered. (From A.M.A. News Notes.)

Group Insurance Covers Millions of U. S. Families

The most widely held of the various group coverages at the start of this year were group hospital expense and group surgical expense protection, both of which covered nearly 34,000,000 persons. These two coverages also showed the greatest growth during the past year.

With 4,400,000 additional persons brought under the insurance companies' group surgical expense coverage in 1953, the total covered rose to 33,976,000, under 71,910 master contracts.

Group hospital expense insurance with the insurance companies saw 4,101,000 added in 1953 and at the start of this year covered 33,510,000 employees and dependents, under 69,990 master contracts.

Group medical expense insurance also grew rapidly in the past year, the 3,615,000 added bringing the total covered to 13,730,000.

Newest member of this protection family, group

major-medical expense coverage, added 510,000 persons in the year and covered 1,042,000 at the turn of the year, under 650 master contracts. This coverage which protects against catastrophic medical expenses has had the most rapid rate of growth of all group insurance plans, practically doubling in the single year.

Group accident and health weekly indemnity insurance plans covered 18,739,000 on January 1, under 217,500 master contracts; and group accidental death and dismemberment coverage included 11,834,000 under 57,190 master contracts.

MEDICAL NEWS IN TENNESSEE

Cancer Control

A letter has gone to all Tennessee physicians from the Department of Public Health acquainting them of a new service offered in aiding in the early diagnosis of cancer. Containers, containing fixative, may be obtained from the Division of Laboratories, Tennessee Department of Public Health, Nashville. The accompanying form (Form No. 570) must be filled out in duplicate. The specimens (biopsy specimens only) should then be mailed to one of the following participating pathologists, *not to the State Laboratory.*

T. C. Moss, M.D.	John W. Adams, Jr.,
1375 Madison Avenue	M.D.
Memphis	Erlanger Hospital
Douglas H. Sprunt, M.D.	Chattanooga
Institute of Pathology	George S. Mahon, M.D.
University of Tenn.	St. Mary's Hospital
Memphis	Knoxville
William W. Tribby, M.D.	Ralph H. Monger, M.D.
Methodist Hospital	605 Medical Arts Bldg.
Memphis	Knoxville
Merlin L. Trumbull,	James D. Roberts, M.D.
M.D.	East Tenn. Baptist Hosp.
Baptist Memorial	Knoxville
Hospital	T. S. Wedde, M.D.
Memphis	Memorial Hospital
Chester K. Jones, M.D.	Johnson City
Jackson-Madison Co.	William Harrison, M.D.
General Hospital	Holston Valley Com.
Jackson	Hospital
	Kingsport

Medically indigent residents of Tennessee may be referred to the several cancer clinics in the state. Form No. 576, which may be obtained from either the Department of Public Health or from local health depart-

ments, should be used for referring these patients. (*See listing of Clinics under Announcements.*)

Regional Blood Program

A regional medical advisory committee for the Red Cross Blood Center has been organized with Dr. John Wallace of Gallatin as Chairman to increase the support and cooperation with the Red Cross Blood program in the Tennessee-Kentucky Region served by the center at Nashville. Other officers named were Dr. Thomas Stone of Mayfield, Ky., Dr. Carl Adams of Murfreesboro and Dr. Charles McMurray of Nashville. The importance of the committee was stressed as an easy channel through which doctors can cooperate with and support the Red Cross Blood program. Dr. Wallace also urged support from both doctors and hospitals.

Bond Sale Approved for Tennessee Institutions

The sale of about \$5,250,000 in state bonds to finance improvements at Tennessee state mental hospitals and other institutions was voted September 7th by the state funding board; \$2,000,000 for mental health institutions and approximately \$2,250,000 for an expansion program at the University of Tennessee college of medicine.

Public Relations Institute

Dr. Roy L. McDonald, Chairman of the PR Committee, Knoxville, Robert C. Bird, Ex. Sec., Memphis and Shelby County Medical Society, Ed L. Bridges, Public Service Director of the TSMA and Clifford Seeber, Field Director for the Tennessee Medical Foundation attended the AMA's Public Relations Institute in Chicago on September 1-2. The Institute, planned primarily for lay executive and PR personnel was the most successful ever held. It featured experts in medical television production, direct mail promotion, AMA services, medical fees, the role of medical assistants, medical motion pictures, and inter-organizational cooperation.

Postgraduate Medical Study

The teaching schedule for the postgraduate course in Obstetrics by Dr. Charles A. Behney for Circuit VI is completed. The first lectures will be held in the teaching centers as listed, beginning the week of October 18.

The registration for the above teaching centers is almost complete and will compare favorably with the registration for past courses. The Hospitals of Memphis, John

Gaston, Methodist, and Saint Joseph, will pay the fees for the interns and residents to take the course.

Dr. Behney is now conducting the course in the East Tennessee area which includes the teaching centers of Newport, Morristown, Knoxville, LaFollette, and Oak Ridge. The lay lecture program has expanded to the extent that the instructor now speaks to groups in nearly all teaching centers. He also lectures to nurses at the hospitals.

CENTER	DATE	TIME	LECTURE HALL
Brownsville	Monday October 18	8:00 P.M.	Haywood County Memorial Hospital
Covington	Tuesday October 19	7:00 P.M.	Health Center
Bolivar	Wednesday October 20	7:00 P.M.	City Hall
Selmer	Thursday October 21	7:30 P.M.	Shackleford Funeral Home
Memphis & Shelby Co. Med. Soc.	Friday October 22	8:00 P.M.	Auditorium, Institute of Pathology Building
Memphis Bluff City Medical Society	Friday October 22	8:00 P.M.	Class Room 16, John Gaston Hospital

University of Tennessee College of Medicine

Two postgraduate programs were offered for Mid-South physicians in October. A course in clinical electrocardiography was held October 6-8 under the direction of Dr. I. Frank Tullis, chief of the Division of Medicine, consisting of lectures, demonstrations, and supervised reading of practice tracings. A course in cardiac arrest, its prevention and management, was held October 14 and 15, directed by Dr. Harwell Wilson, chief of the Division of Surgery, and Dr. Sam H. Sanders, head of the Department of Otolaryngology. It included demonstrations in the Experimental Surgery Laboratory with class participation.

★

Dr. C. Riley Houck, of the Department of Physiology, was awarded research grants of \$7,980 by the American Heart Association and \$3,495 by the National Heart Institute for the study of the biochemistry and physiology of the chronic nephrectomized dog, attention being directed to anemia and hypertension, which appears in these animals.

★

The Division of Pediatrics has received the following awards to carry on research activities. The Mead-Johnson Co. has awarded \$5,000 to conduct a study of the

administration of medicinal agents in youngsters. The U. S. Public Health Service has made an award of \$12,449 for a continuation of studies on hypertension in children with nephritis. It also has awarded \$10,000 for an investigation of circulatory and other physiological phenomena in children with sickle cell anemia. The John and Mary Markle Foundation has renewed for the third year the \$6,000 scholarship of Dr. A. H. Tuttle, an instructor in the Division. Dr. Albert Hand, instructor in the Division, has received an award of \$5,000 from the Playtex Corporation in conducting his studies in pediatric pathology. The Junior Department of the Nineteenth Century Club has awarded a \$2,000 grant to help finance the cardiac catheterization program of the children's cardiac clinic. Studies on the possible value of snake venom in the treatment of poliomyelitis are being financed by a \$500 grant from Eli Lilly and Company and are being conducted at the Isolation Hospital.

PERSONAL NEWS

Dr. Arnold M. Meirowsky, Nashville, has received the Chungmu Distinguished Military Service Medal with the gold star from the Republic

of Korea government. He was cited for the establishment and training of surgical personnel of the first mobile neurosurgical team for the Republic of Korea.

Dr. Edward H. Maurer is the new medical director of the Arnold Engineering Development Center at Tullahoma. He succeeds **Dr. Randolph Cate**, who is entering private practice at Fayetteville.

Dr. Hollis E. Johnson, Nashville, attended the American College of Chest Physicians in Barcelona, Spain in early October.

Dr. W. M. (Mack) Phillips of Memphis has accepted a fellowship in surgery at the Mayo Clinic at Rochester, Minnesota.

Dr. Douglas H. Sprunt of Memphis recently addressed the International Congress of Pathology in Washington.

Dr. Don R. Hornsby has opened an office for practice of medicine in Chattanooga.

Dr. K. M. Kressenberg, Pulaski, has been appointed as the Giles County representative on the Medical Advisory Committee for the Regional Blood program.

Dr. Park Niceley recently addressed the meeting of the Medical Assistants Association in Knoxville.

Dr. E. D. Wells has opened an office for the practice of medicine at Dresden.

Dr. Hoyle E. Bowman has opened an office for practice of medicine at Elizabethton.

Drs. I. E. Phillips, George McCall, Thomas W. Green, H. W. Bachman, William S. Credle, Frank W. Sutterlin, S. G. Pelzer, Bristol physicians, are participating in the Medical Forums presented in that city.

Dr. Frank F. Harris, Chattanooga, has been appointed Medical Director of Volunteer State Life Insurance Company, succeeding **Dr. John B. Steele** also of Chattanooga.

Dr. A. R. Lee has opened an office for the practice of medicine in Dover.

Dr. Alexander McLarty has opened an office for the practice of medicine at Woodbury.

Dr. Robert E. Key, Carthage, **Dr. L. P. Pearce**, Collierville, **Dr. J. R. Lewis**, Ripley, **Dr. Walter W. Potter**, Knoxville, were honored by the University of Tennessee College of Medicine for the completion of 50 years in the practice of medicine.

Dr. George Duncan, Nashville, recently addressed the Hospital Chaplains' Clinic at Nashville.

Dr. Moore Moore, Jr., and **Dr. James G. Hughes**, of Memphis, have entered military service.

Dr. John J. Lentz, Nashville, has been re-elected County Health Director.

Dr. Mary Elizabeth Thompson is the new County Health Director for Warren and White Counties.

Dr. Joseph W. Graves has opened an office for the practice of surgery in Chattanooga, associated with **Dr. J. Paul Johnson**.

Dr. Harold L. Neuenschwander, Knoxville, is

the first president of the newly formed Catholic Physicians Guild of East Tennessee.

Dr. Stewart Smith and **Dr. Richard Donaldson**, Chattanooga recently discussed "Fractures" in a weekly TV program.

Dr. Burt Friedman and **Dr. Frank S. Dietrich** have been appointed to the staff of the University of Tennessee College of Medicine, Memphis.

Dr. Jack Springer, formerly of Pulaski, has joined **Dr. J. C. Leonard** in the operation of the Leonard Clinic in Lewisburg.

Dr. Frank F. Thweatt, Jr. has succeeded **Dr. E. W. Blatter** as medical director of the U. S. Marine Hospital at Memphis.

Dr. Kemp Davis has returned to Morristown for the practice of surgery.

Dr. G. Victor Williams of Chattanooga was recently awarded a 50 year service pin by the Tennessee State Medical Association.

Dr. W. G. Rhea, Paris, has been re-elected chief of Staff of Henry County General Hospital.

Dr. G. B. Crafton announces the opening of his office for the practice of obstetrics and gynecology at 2704 Gallatin Road, Nashville.

Dr. R. D. Ward has opened his office for the practice of internal medicine at 2704 Gallatin Road, Nashville.

Dr. R. L. Dozier, Jr., Nashville, has opened his office for the practice of surgery, 2513 West End Avenue.

Doctors H. T. Moore, Jr., J. A. Jarrell, Jr., and R. H. Bondy, Nashville, have organized a group, Anesthesiology Associates, 2122 West End Avenue, for the practice of anesthesiology.

Dr. Stanley Bernard opened an office for the practice of general surgery at 201 Fairfax, Nashville.

Dr. G. W. Holcomb, Jr., Nashville, announces the opening of his office for the practice of surgery at 2118 West End Avenue.

AMEF Nears One Million Mark

Several large contributions from state medical associations have boosted the American Medical Education Foundation nearer to its goal of two million dollars in 1954. The California Medical Association recently contributed \$100,000. Another large contribution came from the Arizona Medical Association in the amount of \$7,230, which represents a \$10 per member dues increase voted for AMEF by the association. Both Arizona and Utah have followed Illinois physicians by voting a dues increase as a method of increasing contributions from their states.

Since January 1, 1954, the Foundation has received a total of \$968,000 and expects to reach the one million mark in September.—
(From A.M.A. News Notes.)

BOOK REVIEW

Problems of Aging. Transactions of the Fifteenth Conference. Edited by Nathan Shock. New York, 1954. Josiah Macy, Jr., Foundation. 213 pages. Price \$4.25.

In January, 1953, twenty-nine scientists in the field of medicine and related fields met under the auspices of the Josiah Macy, Jr., Foundation to continue the annual conferences on aging and its attendant problems. The organization of these conferences permits the presentation of a problem to be followed by an informal discussion on the part of any members of the group. Thus by questions or suggestions new approaches or modifications of research or study may result as many minds are applied to given problems.

In the discussion on cellular structure the histologic changes which appear with age offered a stimulating field for an exchange of ideas relative to their significance. Much of this resolves around the histologic changes in some of the glands of internal secretion as well as those having external secretions.

The subject of biochemical studies in aging involved discussion regarding the nutritional aspects of growth, in vitro metabolic activity of tissue and the enzymatic activity in different periods of the life of the experimental animal.

The conference on the role of comparative physiology permitted presentation of material and discussion of the changes, if any, of lower forms of life, whose life ends spontaneously, not necessarily from disease, and the changes accompanying hibernation.

R. H. K.

ANNOUNCEMENTS

SMA to Meet November 8-11

Months of careful planning and preparation for the 1954 Annual Meeting of the Southern Medical Association to be held in St. Louis, November 8-11, have resulted in a most profitable and worthwhile program, according to Alphonse McMahon, M.D., St. Louis, President.

The twenty-one sections will meet in half day sessions beginning Monday afternoon and extending through Thursday forenoon. The plan of the meeting will be the same as that carried out for the past three years. Festive highlights include an Association dinner to be held Wednesday night and "The Doctor's Day Luncheon" sponsored by the Auxiliary to be held Tuesday.

Cooperative Cancer Clinics in Tennessee

Memphis

West Tennessee Cancer Clinic

737 Jefferson Avenue

Time: Mon., Tues., Thurs., Fri.; 8 a.m.- 12 Noon.

Nashville

Nashville General Hospital Tumor Clinic

Hermitage Avenue

Time: Tues., 12:30-4 p.m.

Hubbard Hospital Tumor Clinic (Colored)

1005 Eighteenth Avenue, North

Time: Mon., Thurs., 11 a.m.

Vanderbilt University Hospital Cancer Clinic

Twenty-First Avenue, South

Time: Wed.	Thurs.	Fri.	Sat.
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Hour: 1 p.m.	9 a.m.	9 a.m.	9 a.m.
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Type: E.N.T.	Surgery	Gyne-cology	Neuro-surgery
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Chattanooga

Chattanooga Tumor Clinic

Erlanger Hospital

Time: Tues. and Fri.; 8:30 a.m., 12:30 p.m.

Knoxville

East Tennessee Cancer Clinic

Knoxville General Hospital

Time: Thurs.; 12:30-3 p.m.

Johnson City

Tri-County Cancer Clinic

Memorial Hospital

Time: Thurs.; 1 p.m.

Kingsport

Holston Valley Community Hospital Cancer Clinic

Time: Fri.; 1 p.m.

Bristol

Kings Mountain Memorial Hospital Cancer Clinic

Time: Fri.; 1:45 p.m.

Jackson

Jackson-Madison General Hospital

Time: Tues.; 10 a.m.-12; 1-4 p.m.

The Virginia Society of Ophthalmology and Otolaryngology

A Postgraduate Session in Ophthalmology and Otolaryngology sponsored by the Virginia Society of Ophthalmology and Otolaryngology will meet at the University of Virginia from November 30 to December 3, 1954. Those interested can contact Dr. Edwin Burton or Dr. G. Slaughter Fitz-Hugh, Market Street, Charlottesville, Va.

New Fall "March of Medicine" Series

The March of Medicine, national television program, again will resume its telecasts with a program on October 24 on mental illness. Presented by the A.M.A. and Smith, Kline and French Laboratories. It will be carried over 60 stations of the NBC-TV network. The program will stress research and treatment advances in schizophrenia. The final program this fall series will be a special report in December during the A.M.A.'s Clinical Session in Miami. Another full series will be presented in the spring of 1955.

A.M.A. Films for Local Showing

An entertaining 16 mm. film for lay groups or Women's Auxiliary meetings has recently been released,—the title "Operation Herbert." The

popular film for community showing, "Your Doctor," is still available. These films may be obtained gratis, booking them through Miss T. R. Boland, Modern Talking Picture Service, Inc., 1754 Madison Avenue, Memphis.

Clearview

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Albert J. Crevello, M.D.

Diplomate, American Board of Psychiatry and Neurology, Inc., Medical Director

PLACEMENT SERVICE

The placement service of The Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 322 Doctors Building, Nashville 3, Tennessee.

Locations Wanted

A 31 year old, married physician, Protestant, at present in U. S. Army until June, Graduate George Washington University, Internal Medicine with specialty in Cardiology. Prefer community 10,000 or over. Available July. LW-70

Married physician, Protestant, graduate University of Tennessee, at present in U. S. Air Force. Desires general practice in or near large city. Available September. LW-71

A 28 year old, married physician, Protestant, graduate University of Tennessee 1949, three years training in general surgery, priority 4, completing residency June 1954, available July 1, 1954. Desires community 20-100,000. LW-76

A 38 year old, married physician, Catholic, priority 4, graduate Hahnemann Medical College, Philadelphia, Pa., GP-Surgery, community preferred, 5-10,000. Available two months after selection of community. LW-77

A 27 year old, married physician, Catholic, priority 4, graduate Loyola University, Chicago, 1952, wants locum tenens near Memphis July 1-September 30. General Practice. LW-78

A 32 year old, married physician, Hebrew, graduate University of Iowa College of Medicine, Board Certificate held in Urology, priority 4, desires clinic, assistant or associate, community 25,000-500,000. Available July 1, 1954. LW-83

A 31 year old, married physician, Catholic, graduate Ohio State University 1947, recently discharged from service, desires general surgery in community 10,000-50,000. Available September 1st. LW-84

A 28 year old, married physician, Protestant, graduate Emory University School of Medicine, Veteran, previous service 3 years U.S.N.R. Active duty. Desires general practice, clinic, assistant or associate in community 3,000-10,000. Available July 1, 1954. LW-87

A 31 year old, married physician, Protestant, graduate Harvard Medical School, eligible for American Board of Surgery, Military status, 5-A, Naval Medical Corps 2 years. General Surgery, desires clinic, community 10,000 or larger. Available August 1st. LW-88

A 30 year old, married, physician, Protestant, graduate Washington University School of Medicine, Priority IV, 2 years residency training-internal medicine; 1 year Gastroenterology (all approved). Desires clinic, assistant or associate, community 30,000 or more. Available July 1st. LW-91

A 28 year old, married, Christian, graduate Medical College of Virginia. Medical officer from July,

1948, to present time. Board Eligible for Pediatrics, desires clinic, Assistant or Associate in community 30,000 or more. Available July 1st. LW-92

A 39 year old, married physician, Protestant, graduate Yale, Board Certificate held in American Board of Surgery, military status—not eligible. Specialty Surgery (incl. fracture surgery), desires clinic or solo, Associate in community 20,000 to 100,000. LW-93

A 42 year old, married physician, Catholic, graduate Tulane, Draft exempt. Specialty Internal Medicine, desires clinic, assistant or associate in community 50,000 or over. Available August, 1954. LW-98

A 33 year old, single physician, Protestant, graduate Faculty of Medicine, McGill University, Montreal, Canada. Priority IV. Medicine and surgery, clinic, assistant or associate in community 5,000-10,000. Available July 15. LW-100

A 31 year old, married physician, Catholic, graduate University of Tennessee, Priority IV, specialty training three years general surgical residency. Community 25,000 or more. Available immediately. LW-103

A 36 year old, married, Episcopal, graduate University of Colorado, certified in Ophthalmology. Presently in U. S. Navy, Desires community 20,000-200,000 in East of Middle Tennessee. Available July, 1955. LW-104

A 32 year old, single, Episcopalian, graduate Louisiana State University. Desires general practice in community 40,000 to 100,000. Available July 15, 1954. LW-105

A 29 year old, married Protestant, graduate New York Medical College, Priority IV, desires general practice in community 5,000 to 20,000. Clinic, assistant or associate. Available July 1st. LW-106

A 32 year old, married physician, Protestant, graduate Duke University, Priority IV. Would consider clinic, assistant or associate. Desires general practice in community 4,000 to 10,000 preferably East or Middle Tennessee. Available July 1st. LW-107

A 30 year old, married physician, Catholic, graduate Baylor University, Board certificate held in Thoracic Surgery. Desires associate in community 500,000-1,000,000. Available August 1. LW-108

A 32 year old, married physician, graduate University of Illinois, Board eligible in internal medicine, completing period of service in Navy. Prefers clinic. Community greater than 6-8 thousand. Available October. LW-109

A 29 year old, married physician, Lutheran, graduate Johns Hopkins, Board Certificate American Board of Surgery. Now on active duty. Available August 1st. Desires community moderate to large city, population 500,000-up. LW-110

A 32 year old, married physician, Protestant, graduate University of Michigan, Diplomate American Board of Surgery, Category IV. Would like association in commu-

nity 20,000 to 150,000. Available immediately. LW-112

A 34 year old married, 0 children, Protestant, graduate University of Minnesota, presently in Army. Desires general practice in community 5,000 to 25,000. Available October 13. LW-113

A 28 year old, married physician, Catholic, graduate University of Tennessee, Priority 4-A. Desires General Practice with Surgery in community 25,000 or less. Would consider clinic or association. Available 60-day notice. LW-115

A 50 year old, married, Protestant, graduate Vanderbilt University, desires general practice in community 10,000-25,000. Would consider assistant or associate. Available September, 1954. LW-117

A 29 year old, married, Protestant, graduate Bowman Gray School of Medicine, Residency in Internal Medicine, priority IV-C, community preferred 20,000 or more. Prefers clinic, industrial acceptable. East or Middle Tennessee. Available Preferably after January, 1955. LW-123

A 34 year old, married, Roman Catholic, graduate St. Louis University, Board certificate Pathologic Anatomy, presently in USAF, available November, 1954. LW-124

A 30 year old, married physician, graduate University of Tennessee, Priority IV-A. Desires general practice. Available Feb. 1, 1955. LW-125

A 35 year old, married, Protestant, graduate Oklahoma University, Priority III. Specialty training—general surgery 4 years. Clinic, assistant or associate. Available now. LW-126

A 40 year old, married physician, Episcopalian, graduate Bowman Gray, Priority IV, Diplomate American Board Internal Medicine, Subspecialty training in Gastroenterology. Clinic, assistant or associate. Available immediately. LW-127

A 28 year old, single physician, Episcopalian, now in active duty, Board eligible in pediatrics, desires community 10,000 plus. Clinic, assistant or associate. Available August 31. LW-128

A 30 year old, married physician, Protestant, graduate Bowman Gray, Priority IV, Board qualified in Obstetrics and Gynecology. Size of community open. Group practice, assistant or associate. Available September 1. LW-129

A 31 year old, married physician, Protestant, graduate Duke University Board, eligible in American Board of Dermatology and Syphilology. Priority IV. Desires clinic, assistant or associate, also solo. Available October 1. LW-130

A 26 year old, married physician, Protestant, graduate Vanderbilt University, active duty completed, desires general practice in community 10,000 or more, clinic, assistant or associate. Available immediately. LW-131

A 29 year old, married physician, Protestant, graduate Vanderbilt University, priority IV, Available after completing hospital requirements for Internal Medicine Boards on July 1, 1955. LW-132

Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

NOVEMBER, 1954

Number 11

The management and rehabilitation of the paraplegic patient has come a long way in the last decade or so. The knowledge of the proper handling of injuries, so important in the initial stages, must be at hand to those doctors most likely to encounter these cases.

THE MANAGEMENT OF THE PARAPLEGIC PATIENT*

ARNOLD M. MEIROWSKY, M.D., Nashville, Tenn.

I should like to begin this discussion of paraplegia, and of the problems that paraplegia presents to all of us, with the stories of three men, all of whom sustained battle wounds in the Korean War.

The first, an American soldier whom I shall identify only as Jimmy. He became a casualty in the late fall of 1950, sustaining a missile wound of the spinal canal at the level of T-12 and L-1 that rendered him paraplegic. The missile had transversed the retroperitoneal space and lacerated one kidney. Comminuted bone fragments had compressed and contused, but not transected, the conus medullaris. A minimal degree of motor function was preserved below the level but there was practically no sensory perception. Bowel and bladder function were impaired. A laminectomy was performed four days later.

When we first saw this patient, about 2 weeks postoperatively, his laminectomy wound had broken down. He had an extradural abscess. His face was ashen gray and he showed evidence of excessive weight loss. There were multiple decubital ulcers. The bladder was grossly infected.

He died on the 143rd day after having been wounded. He died because of an infection about the spinal cord wound that could not be controlled by antibiotics, because of bladder and kidney infection, because of decubital ulcers and concomitant hypoproteinemia. He died because the sum total of all these complications prohibited early ambulation that could have prevented the formation of a kidney stone. The latter was the ultimate cause of death; a ureteral stone had blocked the remaining healthy kidney and he expired in uremia. Actually, a vicious cycle of complications was the true cause of death. This soldier had a partial spinal cord lesion, many of the effects of which may well have been reversible.

René, a French soldier, is the second of the

three men whose stories I want to relate to you. He sustained a gunshot wound shattering the lamina of L-1 and L-2, damaging but not transecting the cauda equina and also producing six perforations of the intestinal tract. Laparotomy, colostomy and laminectomy were performed shortly after he had been wounded. He was cared for on a Stryker frame and decubital ulcers were prevented by two-hourly turning, day and night. Whole blood transfusions were used to ward off the drop in hemoglobin and red cells that almost always follows trauma of the spinal cord. His paralyzed bladder was treated with Munro's tidal drainage, an acid urine was maintained and the output was not allowed to drop below 2,000 cc. in any 24 hour period.

Six weeks after having been wounded he was flown back to France. At that time he was in good general physical condition. He had regained some motor and sensory function in his legs but not enough to allow him to walk on his own power. I did not hear from him for over a year, when I was notified by French authorities in Japan that he had volunteered to return to Korea for another tour of duty there with the French Battalion.

I need not tell you that it was a happy experience to have René visit me at the ROKA neurosurgical team with which I was working at the time. He walked without a limp, had no pain and had normal bladder function. The only deficit that I could find was a small area of hypesthesia over the lateral aspect of each thigh. He was a happy soldier who did a good job driving an ammunition truck. This man, too, had a partial lesion, just like Jimmy, whose story I have told you.

Finally, there was an Australian soldier who was wounded in action in February, 1951, sustaining a missile wound of the spinal canal at the level of T-9. He was operated on by one of our mobile neurosurgical teams five hours after having been wounded. At operation, one-fourth of the cord had been found to be transected and the remainder of the cord at that level was severely contused. Bladder care was initiated immediately

*Read before the Meeting of the Tennessee State Medical Association, April 20, 1954, Nashville, Tenn.

and maintained throughout his hospital stay. While in Korea he was turned every two hours between two padded litters, a substitute for the Stryker frame of which I shall speak later in more detail.

He was evacuated to Australia about three weeks after having been wounded, without bladder infection, without decubital ulcers and in good general physical condition. We did not expect any functional return but, without any complications whatsoever, this man was ready to start on a physical rehabilitation program at an early date.

Through the courtesy of Major General K. Kingsley Norris, the Director General of the Australian Medical Forces, we received follow-up notes on this patient. He has no complications of any sort, does not require a catheter and has started on his vocational training program. Letters which we have received from the patient himself attest to the remarkable progress which he has made in his physical and mental rehabilitation despite the presence of a physiologically complete transection of the cord.

Here, then, are three stories,—one of a man with complete paraplegia. Prevention of complications from the outset and the splendid retraining program which is available to Australian paraplegics in their home country have put this man on the road to full rehabilitation. One is of a man with an incomplete cauda equina lesion who did not develop any complications and who has made a complete recovery. And one is the story of a man with a partial and potentially reversible lesion who succumbed to a vicious cycle of complications to which the paraplegic is prone, the only treatment of which is prevention.

Trauma of the spinal cord, or of the cauda equina, may result in complete paraplegia with permanent paralysis below the level of injury. Initially it may result in complete paralysis with gradual return of all or of some function, or it may result in partial paralysis with continued gain of functional return. The prognosis cannot be made prior to surgery and often cannot be made at the time of operation.

Trauma of the spinal cord does not manifest itself solely by the pathological changes which are visible in or about the cord at the site of injury. Such trauma affects the entire physiology of the body. It may interfere with sensation and with motion, with function of bladder, bowels and sexual organs, with the circulatory system, the sweat

mechanism and the electrolyte balance. Understanding this, we must realize that the treatment of paraplegia cannot be limited to surgical measures but must comprise attention to all systems. This we must keep in mind whenever we are confronted with paraplegia or quadriplegia.

The life expectancy of a paraplegic man can be as good as that of anybody as long as the complications we have mentioned are avoided. Their prevention is the essence of the management of paraplegia. Bladder and skin care, prevention of hypoproteinemias, early ambulation,—those are the main factors in the achievement of our ultimate goal, rehabilitation.

Initial General Measures

1. *Position.* The position of a patient with spinal cord injury should be prone or supine. The paraplegic or quadriplegic patient is best cared for on a litter which has been padded amply with blankets. In the presence of trauma to the cervical cord, the head may be immobilized between sandbags or blanket rolls. Immobilization by cast is contraindicated because of the absence of cutaneous sensation and because of the disturbed sweat mechanism. In order to prevent the development of decubital ulcers the patient must be turned not less often than every two hours. An easy method of turning a paraplegic or quadriplegic patient who is bedded on a litter consists of placing a second padded litter on top of the patient and turning him between the two litters which have been strapped together. The positioning, the turning and the nursing of paraplegic and quadriplegic patients is facilitated greatly by the use of Stryker frames. Whenever available, the frame is used in lieu of the padded litter; it is covered with soft pillows rather than with a mattress. Padding should be used between the inner surfaces of ankles and knees. In the supine position, the lowermost pillow should end at the level of the ankle, allowing the heel to hang freely. The use of the standard foot board will serve to prevent maintained plantar flexion. In the prone position, the lower pillow and canvas frame should end just above the ankle, allowing the feet to hang down perpendicular to the floor.

2. *Transportation.* The safest method of transporting patients with spinal cord injuries consists of litter transport in the supine position. Care must be taken that the transport litter is well padded by blankets.

3. *X-Ray.* Roentgenological studies should include anteroposterior and lateral views of the involved area of the spinal column so as to determine the extent of the bony damage. Chest films should be taken routinely on all patients with injury to the thoracic spine.

4. *Bladder Care.* Urinary retention with overflow exists in the majority of patients with injury of the spinal cord. The ultimate establishment of a reflexly, or of an automatically, functioning bladder depends on the efficacy of the early management of the neurogenic bladder. Overdistention of the bladder must be avoided. Bladder tone should be maintained. Infection of bladder and ascending genito-urinary tracts must be prevented.

Without delay, a No. 16 French Foley catheter should be inserted under sterile precautions. Larger size catheters tend to block secretions which may readily lead to epididymitis. Hand irrigations twice daily will serve to keep the catheter patent and to prevent infection. The catheter has to be changed at regular intervals. It should not be removed until repeated tests show that the residual urine amounts to less than 30 cc.

Munro's tidal drainage represents the treatment of choice of the neurogenic bladder. It should be substituted for straight catheter drainage at the earliest feasible time. Only in the presence of urinary infection may it be necessary to discontinue the tidal drainage temporarily and to use straight drainage in lieu of it.

Suprapubic cystostomy as a method of treatment of the uncomplicated neurogenic bladder is contraindicated. Even its temporary use interferes considerably with the restoration of a functioning reflex bladder. It makes it virtually impossible to produce bladder automaticity surgically in the chronic stage of paraplegia.

5. *Bowel Care.* An enema should be given at the earliest possible time after injury providing the patient is not in surgical

shock because of associated injury. Enemas should be repeated every other day. Fecal impactions occur commonly in the presence of a paraplegic disorder. Rectal examinations must therefore be done frequently and at regular intervals. Fecal impactions should be relieved promptly. Intestinal distention also requires prompt attention and can best be corrected by enema, rectal tube, and prostigmine intramuscularly.

6. *Fluid Maintenance.* A minimum fluid intake of 4,000 cc. is indicated in every uncomplicated case of spinal cord injury. In the event that this fluid should be administered intravenously, saline should not be used in excess of 1,000 cc. of the twenty-four hour total. An accurate record of the twenty-four hour total intake and output provides the only means to maintain a proper fluid balance.

7. *Blood.* Early after cord injury, an abnormal blood picture develops almost invariably. This is characterized by a sharp drop in serum proteins, followed by reduction of hemoglobin and by a decrease in red cells. Poorly cared for paraplegic patients with decubitus ulcers and with bladder infection may reach a serum protein level below 5.0 Gm., a hemoglobin level below 10 Gm., and may show a reversal of the albumin-globulin ratio. If decubitus ulcers are not present at this time they are most likely to develop. Prevention of these changes in the blood picture constitutes an important aspect of the treatment of a paraplegic disorder. Continued anemia and hypoproteinemia may readily set off a vicious cycle which leads ultimately to cachexia and death. To prevent these common changes in the blood whole blood should be administered whenever the hemoglobin is below 14 Gm. and whenever the red cell count is lower than 4,000,000. It is generally calculated that one pint of whole blood should be given for every 0.5 Gm. of hemoglobin below 14 Gm. The intravenous administration of plasma, serum, or of protein digests does not suffice to combat the changes in the blood; their administration is not warranted. Whole blood is the treatment of choice.

8. *Skin Care.* The skin does not tolerate long periods of pressure with concomitant

ischemia. Turning of the paraplegic patient every two hours constitutes the most important part of the care of his skin. Hypoproteinemia must be prevented. It is also of importance that the skin be kept clean and dry at all times. The perineal areas are frequently neglected and should be checked regularly.

The treatment of decubitus ulcers consists of their prevention.

9. *Sedatives, Analgesics.* The use of habit-forming drugs is contraindicated in the presence of a paraplegic disorder. Invariably, these patients will have to undergo prolonged hospitalization. Until they are convinced of their potential rehabilitation and until they have overcome the grave mental shock which occurs with sudden trauma to the spinal cord, they are quite prone to succumb to the tragic danger of addiction. Every effort must be made from the first to prevent the patient from becoming exposed to addiction which is incurable.

In injury to the high cervical cord, the use of morphine is contraindicated also because of the proximity of the respiratory center in the medulla.

Not infrequently, anatomical or physiological transection of the cervical cord is responsible for a disorientation syndrome which may be associated with severe bradycardia, hypotension and hypothermia, representing a sympathetic blockade. Rather than using sedatives in a patient presenting this syndrome, atropine may be employed successfully.

10. *Pressor Phenomena.* The pressor phenomena occur rarely in the acute stage but are not at all uncommon in the subacute and chronic stage of paraplegia and quadriplegia. They consist of paroxysmal headaches, paroxysmal hypertension, profuse sweating above the level of the lesion, and occasionally of associated generalized seizures. Though still not well understood, these phenomena not uncommonly are elicited by overdistension or by irritation of the bladder and can then be reversed instantaneously by adequate bladder drainage.

Sacral neurotomy has been helpful in relieving patients of persistent pressor phenomena.

Neurosurgical Intervention

Laminectomy is indicated in the immediate management of every penetrating wound of the spinal cord and spinal canal. Associated injuries may occasionally delay surgical debridement and decompression which should be carried out at the earliest feasible time.

In injuries which are not compound, laminectomy is certainly indicated whenever there is partial or complete blockage of the subarachnoid pathways.

The aim of neurosurgical intervention is three fold: (1) to relieve spinal cord, cauda equina or individual spinal roots of pressure produced by comminuted bone and fragments of disc, blood clots and foreign bodies; (2) to debride and close the wound in such a manner as to give maximum assurance of primary wound healing; (3) to determine the extent of the neuro-anatomical deficit.

Late Complications

Of the common late complications, spasticity, pain and bladder problems deserve special consideration.

Spasticity does occur in a considerable percentage of patients following trauma of the spinal cord. Mild spasticity is an advantage rather than an impediment. It actually facilitates ambulation, getting in and out of a car and other such activities. In many instances, however, spasticity becomes sufficiently severe to interfere with, and to endanger the patient's general health. Such progressive spasticity may lead to ankylosis of joints, interfering with ambulation and physical rehabilitation. It may prohibit surgical closure of decubitus ulcers and may bring about weight loss and hypoproteinemia. If unchecked, cachexia, ultimately leading to death, will be the inevitable sequel.

Neurosurgical intervention is not only indicated but absolutely necessary as soon as signs of progressive spasticity make themselves known. The operation of choice is anterior rhizotomy.

There are essentially two types of pain in the presence of paraplegia. One is burning pain that occurs in virtually every paraplegia. It is usually intermittent and varies

in degree. Ambulation and activity help considerably in combating this burning pain. The other is intractable root pain, commonly seen in lesions of the cauda equina. Such root pain is extremely severe and intolerable. Chordotomy (lateral spino-thalamic tractotomy) represents the treatment of choice if drug addiction is to be prevented and rehabilitation be facilitated.

Transection of the spinal cord eliminates central control of the bladder. A secondary center in the conus medullaris, governing the bladder through the sacral reflex arc, may then take charge of the bladder. It is the aim of tidal drainage and bladder training to bring this secondary center into play and to produce a reflexly functioning bladder. Dysfunction of the sacral reflex arc is the most common cause of failure in the establishment of such a reflex bladder. Such dysfunction can frequently be overcome by neurosurgical interruption of the sacral reflex arc. The indications for sacral neurectomy can readily be made on the basis of bladder studies which can be carried out on any paraplegic patient under spinal anesthesia and differential sacral novocaine blocks.

Rehabilitation

This is the ultimate goal of surgical, medical and nursing treatment of a paraplegic patient. The tenet long held that injuries of the spinal cord invariably produce paraplegia, usually leading to death within a few weeks or months, is a dictum of the past. There are today a great many veterans of World War II and of the Korean War who, though permanently paraplegic, perform well at steady jobs, live satisfactory family lives and are valuable members of society. The problem of management and rehabilitation of civilian paraplegics

remains with us as a weighty and waiting problem to which all of us would want to give much thought and consideration.

Discussion

R. EUSTACE SEMMES, M.D. (Memphis): The best treatment for any disease or injury is preventive, and a most important duty of the doctor is to anticipate complications, not to wait for them to develop and then try to remedy them. In paraplegic patients the situation is already tragic, and they should have immediate and continuous care as just described by Doctor Meirowsky, whose wide experience makes him particularly competent to discuss this subject. While paraplegia is comparatively rare, cord injuries occur in isolated places,—on highways, on shipboard and in every size of towns, making knowledge of their early handling and management, at least, desirable on the part of all doctors, regardless of their particular fields of practice.

It is astonishing how little attention is focused upon the prevention of the common complications in cord injuries. In a recent monograph on the treatment of decubitus ulcers by a prominent neurosurgeon, the cause and prevention was skipped over entirely. In the April issue of *The Journal of the American Medical Association*, in an article describing an ingenious modification of a stretcher for easily elevating paraplegic patients to a standing position for plantar weight bearing, I was astonished to find it stated that it is an accepted fact that bedsores develop in paraplegic patients in all hospitals, regardless of their size and overall efficiency. At the Baptist Memorial Hospital of Memphis we have been able to prevent them for a period of thirty years. The Veterans Administration Hospitals in the Southeastern Area have been particularly successful in preventing the complications of paraplegia. Doctor Martin has stated that after Doctor Meirowsky was put in charge of the Neurosurgical Department in Korea, the bedsores of paraplegic patients admitted to the Walter Reed Hospital dropped from one hundred per cent to zero. There is no need to accept it as inevitable that every paraplegic patient, in addition to his loss of power, will suffer from abdominal distention, hyperthermia, bedsores, genitourinary infection, contracted bladder, kidney and bladder stones, painful spasticity and mental depression.

Rh sensitivity in the pregnant woman may presage serious disease in the offspring. Hence the need of testing for this in the Rh negative woman during her pregnancy, as may be done now by aid of the laboratories of the Tennessee Department of Public Health. When found with this serious complication of pregnancy, the doctor responsible for the new-born child must be equipped to act promptly, if necessary, to save the child, or have the mother delivered where such management is available to the offspring.

RECENT ADVANCES IN THE MANAGEMENT OF HEMOLYTIC DISEASE OF THE NEWBORN

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Erythroblastosis accounts for about 10 per cent of all still-born infants, an estimated 5-10 per cent of all cerebral palsies, and generally occurs in one out of every 150 pregnancies. The disease embraces a broad spectrum of pathology ranging from a mild undiagnosed anemia to the hydropic fetus. The three classical forms of the disease are anemia, icterus gravis, and fetal hydrops. All three conditions are characterized by enlargement of the liver and spleen, anemia, jaundice, red cell immaturity, and extra-medullary blood formation.

Etiology

The cause of erythroblastosis is two-fold in nature. The mother is immunized by factors in the fetal blood. This may be due to a previous pregnancy, a blood transfusion, or by a forgotten injection of intramuscular blood popular in therapy years ago. The intra-uterine passage of maternal antibodies via the placenta then occurs during the last half of pregnancy. There is only a single layer of syncytial cells separating the two circulatory systems at this time.

It is estimated that 2 per cent of all cases of hemolytic disease of the newborn are due to factors other than those of the RH HR system. In these cases the mother is Rh positive but the disease results from isosensitization to the A-B factors. Usually the mother is group O, and the infant is A or B. Other factors such as the Kell, Kidd, and M-N systems may be the cause.^{1, 2}

Management During Pregnancy and at Labor

Management of the mother is based on

following the maternal Rh antibody titer. These titers generally correlate with the severity of the infant's disease but exceptions have been observed. Titers of 1:32 or above generally indicate severe disease in the infant but fatal cases have been seen with low titers and the converse is also true.

Early induction of labor prior to 37 weeks has in the past had its advocates and the overall mortality was somewhat reduced. Kernicterus or brain damage is more common in premature infants however and the early induction of labor is to be condemned.

Prenatal testing should be done during the first trimester and again at the seventh month. Ideally, portions of these blood samples may be kept frozen and be tested simultaneously with a specimen taken at 37 or 38 weeks. At 38 weeks labor may be induced if indicated by a four fold titer increase. It is justified also if a preceding pregnancy ended in a severely affected infant or one with kernicterus.³ It should be noted that it is less dangerous to transport a mother to a center for delivery than to wait and move a diseased newborn. At the time of delivery the cord should be left somewhat long. A specimen of clotted cord blood and one in oxalate or in heparin should be obtained for hemoglobin, blood grouping, Rh typing, bilirubin level, and the Coombs test.

The cord should not be stripped toward the baby as this adds more antibodies and in some infants may precipitate heart failure.⁴

Diagnosis

The diagnosis of hemolytic disease of the newborn must not rest on clinical evi-

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dence alone. Most newborn erythroblastotics look healthy. The following points are useful in diagnosis and offer a gauge in judging the severity of the process.⁵

1. A positive Coombs test.
2. Anemia with less than 13.5 Gm. hemoglobin in the cord specimen or less than 15 Gm. at birth in blood from heel or toe.
3. Jaundice within first 24 hours of life.
4. Enlarged liver and spleen.
5. A previously diseased sibling.
6. Normoblasts greater than 25 100 WBC on the first examination.
7. Cord blood icterus of 50 units or a bilirubin of greater than 3 mg. per cent.
8. Reticulocyte count of greater than 6 per cent.
9. Clinical features such as pallor, hemorrhage, cyanosis, or rapid respirations.

The demonstration of anemia and a positive Coombs test are the two most helpful diagnostic criteria. The Coombs test when positive makes diagnosis. It may be negative in those instances when the sensitization is due to factors of the A-B-O system. This direct antiglobulin test is positive for red cells coated with antibody which is a form of gamma globulin. Infant or cord cells to be tested are washed and exposed to serum from a rabbit previously immunized against human gamma globulin. When positive the cells are agglutinated.

Treatment

What are the criteria to indicate the need of an exchange transfusion? Dr. Diamond believes any of the following are indications for transfusion in an infant diagnosed as having hemolytic disease.⁶

1. In a premature infant of less than 38 weeks or less than 5 lbs. 8 oz. in weight.
2. With clinical signs on the first examination at birth of edema, pallor, or enlarged liver or spleen.
3. Kernicterus in a previous sibling.
4. If a maternal titer is 1:64 or higher.
5. If the hemoglobin at birth is less than 15 Gm.
6. An exchange is indicated or a re-exchange should be done at a later pe-

riod if the bilirubin rises to 20 mg. per cent.

If the bilirubin level can be controlled and kept below 20 mg. per cent it has been shown that kernicterus is prevented. Consequently the 5-10 per cent of cerebral palsy caused by hemolytic disease is preventable. This represents a real medical advance in a very discouraging field. In a fair proportion of cases the bilirubin does not rise excessively and exchange transfusion is not indicated. Jaundice of more than a minimal degree developing within the first 24 hours is very likely to be associated with a bilirubin level of greater than 20 mg. per cent. Generally, it may be stated that a serum bilirubin level of less than 10 mg. per cent at 24 hours in a mature infant will not rise beyond 20 mg. per cent. If the level is less than 15 mg. per cent at 48 hours the same tends to be true.⁷

Nursery personnel should be made familiar with the fact that jaundice within the first 24 hours is one of the danger signals of a hemolytic process. The chests of the infants should be exposed and observed in daylight to detect early color changes. The personnel must be aware that any infant is a suspect whether or not the mother is a known Rh negative individual.

Exchange transfusions are done by using around 500 cc. of fresh, whole citrated or heparinized blood. This blood is Rh negative and type specific for the infant. In A B O incompatibility type O blood is used, and 10 cc. of A and B substances are added. The procedure is done via the umbilical vein and requires from one to two hours to complete. Great care must be observed to prevent a fall in the infants body temperature. In premature infants small repeated exchange transfusions of 200-350 cc. are preferable to one large exchange.⁸ Calcium gluconate 10 per cent in 1-2 cc. amounts are utilized to offset the tetany caused by the citrated blood. Oxygen should be available and frequent checks of the infant's pulse, respiration, and temperature during the exchange are mandatory. A three member team is required with one member acting as a recording secretary so that the exact amounts withdrawn and injected are at all times known. A re-exchange when neces-

sary may be done via the umbilical vein utilizing the polyethylene catheter as with the first exchange. Care must be taken that the tube is inserted only 2-3 inches beyond the abdominal wall.

Following the transfusion the infant is given antibiotics and extra vitamin K, and feeding is delayed for about 24 hours. These infants may be breast fed. Follow up studies include serial hemoglobin levels and checks on the bilirubin. If the level of bilirubin exceeds 20 mg. per cent, a re-exchange is done. During the following 4-8 weeks the infant's hemoglobin is occasionally checked and small transfusions are given if the hemoglobin falls below 7.5 Gm. By exchange transfusion overall mortality is reduced 24 per cent and kernicterus is one-fifth as frequent. These figures are from a 1951 study done in England by Mollison.⁹

During the past few years ACTH has been utilized in the treatment of these infants. At present in severe cases both exchange transfusions and hormone therapy are used by the author. Hormone therapy is an adjunct. Its place in treatment remains to be evaluated. In July, 1953, Colonel Geppert at the Brook General Army Hospital published a series of twenty cases treated with hormone alone.¹⁰ In his series there were three deaths, and six infants whose bilirubin rose over 20 mg. per cent. One of the deaths showed kernicterus at autopsy. In the discussion Geppert suggested that both means of therapy should be used for severe cases.

In using ACTH in newborns one must be alert to the dangers of sepsis. Handling must be minimized and the infants are treated with antibiotics, given extra potassium chloride, and observed closely for thrush or abscesses. The dose of ACTH

used is about 5 mg. intramuscularly every six hours with a larger initial dose. The therapy is continued for five to ten days depending on the severity and on observations as to when the positive Coombs reaction is reversed.

Conclusion

In conclusion it should be stated that early diagnosis is of paramount importance. It requires the team efforts of the obstetrician, nurses, pediatrician, technician, and blood bank. By early diagnosis and early treatment the disaster of kernicterus may be avoided.

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It is quite obvious that there are neither enough psychiatrists nor enough hours available to them to carry out the type of therapy described in the accompanying case reports. Nevertheless, the management of these patients demonstrates something of the mechanics or dynamics of the disorder, and conceivably might lead to a more practical, shortened psychotherapeutic follow-up treatment after contact has been established through shock therapy.

PSYCHOTHERAPY IN SCHIZOPHRENIA*

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Twenty to twenty-five years ago schizophrenia was considered a hopeless condition. Patients admitted to state hospitals were rarely discharged. No physical therapies such as insulin, metrazol or electroconvulsions were used in this country, and psychotherapy as such was considered impractical. To quote the text book which we used in medical school, Henderson and Gillespie, 1932 edition (page 226):

"We admit frankly that when cases have reached the stage of entering a mental hospital, the period of co-operation has usually passed, and the question then is much more one of treating symptoms. We appreciate that an analysis of the individual symptoms does help in allowing us as medical men to understand more clearly the processes by which the psychosis has developed, but such analysis has, so far, rarely had any therapeutic effect. We have observed also that cases of this type in the hands of the psychoanalyst are often considerably aggravated rather than helped."

About twenty years ago the insulin coma treatment of the Viennese, Sakel was introduced into this country, and up to 75 per cent of patients treated were reported as cured. This was followed by the use of Metrazol with equally startling results (and far more broken bones), and later electroconvulsive therapies of various sorts. It is undeniable that these treatments, particularly insulin, do bring about remissions of varying completeness for lengths of time from a few days to a few months, but it is a moot question if any of these of themselves favorably influence the course of the disease. The influence of the introduction

of these on treatment of schizophrenia on the other hand has been profound and most salutary. The first of these favorable influences was a new direction of study. The reports of Malamud and Render and later of Romano and Ebaugh on the prognosis of schizophrenia treated without the physical therapies in small psychopathic hospitals appeared. They found that up to 25 per cent of patients made social recoveries. Another useful, and probably the most useful result of the introduction of insulin, was the genesis of a new hope on the part of the psychiatrist in the treatment of schizophrenia and a stimulation of a rash of new treatments. Some of these were entirely empirical, others based on theories logical and illogical, sound and fantastic, provocative and stultifying. The surprising part is that all of them achieved good results in that an increasing number of patients recovered.

Possibly the common denominator of the restorative effects of these diverse treatments may be illustrated by a seemingly unrelated event which occurred at Tennessee Central State Hospital. Dr. Harold Sanstead of the United States Public Health Service, attached to the Department of Nutrition at Vanderbilt University School of Medicine, was surveying the nutritional state of patients at the hospitals. As one aspect of his study he divided patients there, chiefly schizophrenics, into three groups:— the first of which was given daily a certain multivitamin preparation, the second a placebo in the same manner, and the third was given no medication. At the end of the study period he was surprised to find that the patients of the group who had the vitamin supplement had a mean weight gain of

*Read at the Alumni Meeting of the Vanderbilt Medical Society, June 4, 1954.

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ten pounds, since he felt the hospital diet was adequate. He was even more surprised when he discovered that the placebo group made an identical weight gain whereas the untreated group remained unchanged. He was forced to the conclusion that the first two groups responded to the interest showed in them by increased appetite. By this anecdote, I am not saying that attention, just any attention, is the answer to the riddle of the treatment of schizophrenia, for many patients, even smothered with well-meaning attention of certain sorts, become progressively worse.

From the time the syndrome of schizophrenia was first identified and studied by Bleuler many important insights into its meaning have been elucidated. Jung, Adolph Meyer, and his students have contributed greatly to our knowledge of the condition, but these studies were directed primarily to its understanding and not to methods of treatment of the individual patient. Freud concerned himself but little with schizophrenia and promulgated the apparently untrue dictum that psychoanalytical principles were not applicable to the psychoses.

With the new hope for schizophrenics and the resurgence of interest in them, a number of analysts began treating patients on the basis of psychoanalytic principles but with a markedly altered technique. Among those who have made important though divergent contributions to this field are Harry Stack Sullivan, Frieda Fromm Reichmann, Paul Federn, and John Rosen.

Of the methods used, that of Rosen is the most novel. He enters into the delusional system with his patient, accepts their symbolic distortions and talks directly to his patient's "unreality"! This has been termed direct analysis as opposed to interpretive psychotherapy, since in the latter the symbolic distortions of the patient are *interpreted* to him in terms of external reality. The effectiveness of such a direct approach in bringing about responses in an otherwise absolutely unresponsive patient is undeniable. Recently I was seeing a mute unresponsive woman of about fifty, who had to be carried to the office. She sat wadded in her chair, legs tightly together and

crossed, arms also crossed over her chest. She glanced furtively in my direction, made no reply to any of the amenities of the social situation and gave no evidence that she even heard me. It was obvious, however, that she was frightened and particularly afraid of being alone in the room with me. I said, "You are afraid." The response to this was wadding herself even more tightly in the chair and an increase in her respiratory rate. I then said, "You are afraid I am going to rape you." At this, she jumped from her chair, placed her hands over her genitalia and said clearly and firmly, "I am not."

There are, however, several theoretical objections to the accepted *modus operandi* of direct analysis: (1) The attention span of the schizophrenic patient is so short that he is frequently incapable of understanding the meaning of more than a few words consequently. (2) He has, to a large extent, lost the power of verbal communication, words have become truly magical objects, but have little or no communication value in the generally accepted sense. (3) The hallucinated internal voice may dominate his ideation. Any of these almost deny the basis of Rosen's direct therapy.

We have been using over the past several years direct therapy of a somewhat different sort, which though quite wordy, does not depend nearly so strongly on verbal communication. Probably the best way to tell of it is to give some illustrative cases of our most withdrawn patients and discuss the reasons later.

Case Reports

The first case, L. M., was treated by one of us (R.T.K.) The following is the record.

Case 1. "Mrs. M. was 22 when I started to treat her. She had been sick for a year and a half. Her mental illness had been so profound at first that she was treated for encephalitis in a local hospital. After this she received several courses of electroshock treatment and at least one course of insulin shock treatment, both at the City View Sanitarium and later at Central State Hospital. She had, I believe, three courses of electroshock treatment at Central State Hospital. Our experience was at first that she would respond to this treatment quite well but would relapse as soon as her next menstrual period occurred. Finally she responded little to shock therapy.

"When I began treating the patient, she was a

regressed, quiet room case. She required tube feeding, and had to be bathed and dressed. She did not speak but rather verbigerated quietly in a perplexed, continuous fashion. There was, however, about her always something of a horrified, almost faint alertness.

"The plan was to have the patient come to my office daily for 45 minutes and make no demands on her, but to talk continuously to her, describing the scene out of the window and other completely bland situations. This was done and during the first interview, she wept profusely. She was informed at the end of the interview that these interviews would occur daily and were to help her get well. She was also told that she was sick and that I was a doctor and I felt she needed help.

"It might be of importance to describe my very first (and also repetitive) approach to her on the ward. I went to the quiet room, had the nurse open the door and informed the patient that I wanted to see her in my office on the first floor. I requested that she get dressed to accompany me downstairs, if this were possible, and went on to say if it were not possible, the nurses would dress her and that I would come and escort her downstairs. As a good fifteen to twenty minutes of each interview was spent in going up and down the one flight of stairs from the ward to my office, perhaps it would be advisable for me to describe this in as much accuracy as I can, although I fear this is an essentially impossible task. I might preface this by saying that, as I look back on it, I wonder if the regressed schizophrenic really "knows" (in the ordinary sense of "knowing") how to do such simple things as go downstairs, eat a meal, move his bowels, etc. As a consequence, by practically describing how to put one foot in front of the other, this process of going down the stairs usually took place quite painfully. I initially was coaxing somewhat in getting her down the stairs, constantly talking to her, reassuring her, repeating frequently that we were going for an interview to my office, etc. At no time did I make any physical effort to hurry up the process of going down the stairs, I did not make any physical contact with the patient in an effort to speed up the process of getting to and from the office.

"In the first weeks of her treatment, she seemed especially sensitive to the remarks of other patients who, with much hostility, covered in a sugar-coated fashion, would urge her to go with me down the stairs and to my office. As it was impossible to control this, because of the Central State situation, I found myself unable to do anything except ignore this situation and direct all of my attention to the patient rather than to any distractions. When I say that she seemed sensitive to such remarks, I am interpreting her facial expression as this was one usually of annoyance, disgust, but perhaps mixed with some fear and withdrawal.

"In the first weeks of treatment one of the big problems became whether or not the patient would sit down in the chair in my office, after she arrived. I had been from the first offering her chair and then, if necessary, coaxing her to sit in it. Perhaps I was being a bit too solicitous and a bit too gallant in my approach, placing myself more or less in the role of her lover, and it was on one occasion after several weeks of treatment when I did not offer her a chair that she spoke to me clearly and in full voice for the first time. She said, of course, "Aren't you going to ask me to sit down?" After the patient had spoken to me and established what was if only momentarily actual contact by voice and not verbigeration of a mumbled sort, she appeared a little startled and perhaps frightened but did sit down at once. It was during this period that I spent most of my time reading to her fairy tales, these I read to her frequently, I also began taking her on walks and she communicated with me directly for the second time on one of the walks. I had commented on the chirping of an insect in one of the trees and how it suggested that before long we would be having fall weather, and in response to this remark, the patient asked me "*Do you really think I'm an insect?*"

"These remarks are merely indicative of the extremely limited contact I had with the patient and I do not believe are particularly significant of any deep dynamic factors involved. On another occasion she asked me a similar question, "What country do you represent?", at which time she was merely reminded who I was, that I was a doctor and interested in giving her some help.

"After she had been under treatment for approximately four months she suddenly showed a remarkable change. This was over one weekend and when I went to the ward on Monday, she suddenly appeared fully dressed quite excited, very much like a little girl, who approached me saying that she was told by the nurses that she was much better, did I think so, and that was it not time for our appointment. She talked endlessly, never referring to her inability to talk for months. During the first two weeks of her sudden change she was extremely voluble and could only be described as being quite silly. She was actually extremely coy in the office, on a few occasions sat on the edge of my desk in a very playful fashion, but was too timid to be really provocative. She was diffusely anxious although not able to recognize anxiety as such. As time went along, a serious problem developed in that there was immense jealousy on the part of other women on the ward for the patient's having gotten well and having had such a large share of my time. As might be imagined, the psychotic interplay between this patient and others because of this problem was so devastating that it really was impossible to do anything but discuss this situation, and it was not possible to make this turn to the patient's advantage in seeing her

own inner problems. After all, she was essentially very much in love with me. She was accused of just this relationship by other patients, and it was impossible for her to in any way separate their accusations from her own fantasies about the situation.

"It was impossible to pursue insight psychotherapy. She always came to interviews, she discussed things on a highly superficial level. I did not feel she should be allowed to have long periods of silence because I did not feel that she could stand it, and, as a consequence, I was fairly active and nothing really in the way of further insight occurred. She did, however, become much calmer, much more poised and, although still quite flighty and silly, she seemed less anxious and a good deal more at ease in social situations. She was then discharged from the hospital, lived with her family as a sort of reclaimed, lost child, having very few demands made on her at the time I left her. Since then I have received a couple of letters which indicated that things are going pretty much the same with her. She has now been out of the hospital two and one-half years."

There are many of you who will wonder if the "treatment," and I place the treatment in quotation marks, which Mrs. M. received had anything to do with her recovery, and that she spontaneously recovered after four months and about a hundred hours of fairy stories. Perhaps you may even question if she got well in order to avoid another one of those childish stories, rather than because of anything positive that was done for her.

Another similar but more convincing history is that of Mrs. J. G. She is a 38-year-old white twice-divorced woman who is now under treatment by one of us (R.V.L.).

Case 2. Mrs. G. first became ill 9 years ago in 1945, was confused and hallucinated, and was admitted a short time later to the Sheppard and Enoch Pratt Hospital in Baltimore where a diagnosis of schizophrenia was made. She was discharged 5 months later, only to be readmitted the following month, and on this admission she remained nearly 2 years, receiving insulin coma and electroconvulsive treatment. She then was discharged for a period of two and a half years.

In June, 1952, she again received electric shock treatment, and I believe insulin, and was discharged unimproved 9 months later because her family's money was exhausted. She remained at home for the following 5 months (how, I do not understand) hallucinated, confused, negativistic and was finally committed to Central State Hospital in July, 1953. She received no further physical therapy.

Treatment was begun (by R.V.L.) in October of last year. At this time she was (as she had been since admission) markedly withdrawn with

bizarre, stereotyped mannerisms, chief among which was an almost constant posture in which her left hand was placed close to but not touching her throat and her right hand palm down extended out from her body. Her face was frozen in an expression of painful apprehension. She seemingly did not understand what was said to her, and her only vocal response was an occasional, apparently worded, but unintelligible high pitched whine which could be interpreted as *don't* or *no*. She had to be dressed, fed, moved bodily from place to place.

She had to be brought to the interviewing room by the attendant, and for some weeks difficulty was encountered in having her enter the office. She was always untidy, would stand or walk slowly around the room in her posture described as if feeling her way in the dark, there would be sudden apparently unprovoked outbursts of laughter or crying. The therapist (R.V.L.) spent most of his time with her talking to her about superficial current situations,—what the weather was like or reading her children's stories. When she was offered cigarettes, she appeared as if she would like to smoke but seemed to be afraid to touch the cigarette. However, when she was given a holder to keep with her, she would allow a cigarette to be placed in it and then smoked avidly (the doctor, of course, smoked with her). Candy was offered, looked at longingly, but refused. After 6 weeks of daily sessions of this type she began high pitched mumbling, and it seemed that she was saying "dangerous" so the doctor repeated in many tones of voice over and over, whispering it at times and others quite firmly, "You are safe," and quite suddenly at the end of 2 months' treatment she said quite distinctly, "Thank you." Following this, in the course of 2 or 3 weeks, she showed remarkable change. She began taking interest in her personal appearance, came to the room willingly, began eating the proffered candy, requesting water to drink repeatedly, which sent the doctor scurrying like a Western Union messenger boy back and forth from the interview room to the kitchen (at the other end of the ward) several times a session. Fortunately for the doctor's disposition, this phase did not last long.

By Christmas time she was talking fluently and telling without urging of the events of her quite lurid past and showing unbelievable insight into its effect on her and the motivation in her behavior. She told of the feeling in her psychosis. Some of these were: she was being changed into leather; once when the physician touched her it burned her and left scars; and the very significant statement, "Doctor, I could recognize you all the time, but I couldn't understand what you said."

She is now to all appearances well and has been so for 4 to 5 months, is a ward leader and active in occupational therapy. She spends week-ends at home, where her mother states she is better than she has been in ten years. The only reason she

has not been discharged is that we feel her mother is incapable of not provoking her to further symptoms.

One of us (R.V.L.) is currently treating a twenty-five year old girl (Miss E. P.) with the same gratifying results.

Case 3. Mrs. E. P. has an 8 year history of gradual deterioration to the point of mutism. The treatment here has been based on the same theories and consists of seeing the patient daily at a regular time, eating green peppers, chewing teaberry gum, smoking, and playing Chinese Checkers with her. One very illustrative situation arose with this patient which demonstrates the kind of relationship which must exist. On one of their walks the patient, Betty, had on new shoes. As she neared the hospital on returning she suddenly stopped, looked a little discomfited, and took off her shoes. (Actually she had worn several blisters on her feet on the walk.) As soon as the patient took off her shoes, the physician took off his, and together in their sock feet they returned to the ward. The patient was as ever mute, and the doctor did not comment on the incident in any way.

Discussion

In the words of psychologists and sociologists, let me present the treatment situation for you and then discuss briefly why we treat the patient in this apparently "unreal" manner and why we believe it works. First, no demands were made upon these patients, no questions asked, no responses expected, nothing that the patient did was commented upon, no oddities or peculiarities were even apparently noticed. Though the patient was the sole interest of the therapist for the regularly scheduled hour, the relationship was almost casual and never so intimate as to be threatening.

Above all the therapist was constant and consistent. He was never cross or annoyed at the patient's inability to reciprocate his intense interest and affection (and may I interpolate it takes intense interest and devotion to continue such interviews daily, week after week with a patient who frequently not only rebuffs one's advances but even more insolently ignores one's presence).

Through the above means, however, a climate is constructed in which the sullen, rebellious, frozen, unloved child can feel wanted and important and thus (and I believe only thus) can the therapist enter into direct treatment of *the ineffable, undecipherable dream which is schizophrenia*. It is akin to play therapy with children and brings the patient into a situation where he does not have to see himself as bad, but is loved no matter how much he pouts or refuses love. At the time he gets increasing direct satisfaction from each increment in participation, for it seems that schizophrenics see themselves as unloved and therefore unlovable.

As our recent Flexner Lecturer, Willi Hoffer, stated, "The child is loved by his mother in order to love himself." In these cases the patients were loved by the therapists in order to love themselves, and once they felt genuinely loved, as you may have noted in the protocols, they quite suddenly began to love themselves sufficiently to make once again contacts with the external world and thereby to gain a measure of satisfaction from it.

The author reviews the methods of obtaining and preserving homografts as well as indications for their use.

ARTERIAL HOMOGRAFTS

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Procurement, Methods of Preservation and Indications for Use

The purpose of this paper is to present a concise outline of the subject of arterial homografts: their procurement, methods of preservation, and the indications for use. The experimental use of blood vessel grafts first began more than fifty years ago, and since then many materials have been used as grafts, usually with little success. Vein grafts were probably the most successful prior to the use of arterial homografts, though their use now is limited to the bridging of defects in smaller vessels. Autografts (from same person) function well, but obviously the vessels that can be sacrificed are limited. The value of heterografts (from different species) remains in doubt. Among substitutes used with less success were tubes of glass, aluminum, gold plate, silver lines with paraffin, plastic, and tubes of skin. Arterial homografts are now the most widely used and the most practical type of blood vessel graft.

Procurement

Deterling, Parshley and Blunt² have summarized the criteria which should govern the selection and procurement of arterial grafts. Donors should preferably be no older than 35 years, and though the physiological age is important, donors as old as 45 years may be acceptable. Occasionally persons of an even greater age are acceptable as donors, provided the vessels are in good physiological condition. As a rule vessels of children under three years of age are not acceptable due to the small caliber and marked friability.

The most desirable donors for blood vessel grafts are young people who are accidentally killed or who commit suicide. It is preferable, but not essential, that there be

no contamination of the grafts with intestinal contents as is often the case in accidental deaths with injury to the abdomen. Medicolegal deaths are also good sources of arterial grafts, provided they are promptly refrigerated. These require only the coroner's permission for removal.

The major difficulty in obtaining grafts is the large percentage of persons whose cause of death rules out their acting as donors. The following causes of death make the patient undesirable as a donor: (1) malignancy, (2) mesenchymal diseases (lupus, rheumatic fever, periarteritis, nodosa, etc.), (3) blood dyscrasias, (4) generalized infection (syphilis, tuberculosis, septicemia, subacute bacterial endocarditis, or poliomyelitis). As can be seen, the age factor plus the above causes of death greatly reduce the number of possible donors. This is one of the reasons for the decreasing use of the tissue culture media type of arterial homograft bank. The grafts may be maintained only four to six weeks in this media and they must be discarded, requiring a constant replenishment which is often difficult to accomplish.

Arterial homografts are secured at the autopsy of persons who have recently died and are acceptable under the above restrictions. All bodies used must be refrigerated as soon as possible after death, preferably within three hours. Persons dead for an undetermined period are not suitable as donors. Obese people require longer refrigeration and, therefore, such bodies must be refrigerated immediately after death. The autopsy should be performed and the graft removed as rapidly as possible, preferably within six and not more than eight hours after death.

A routine autopsy, with no attempt at sterility, may be performed if the ethylene oxide or high voltage cathode ray method is to be used in preserving the graft. Even under such circumstances, however, it is

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preferable that the grafts be removed prior to soiling by intestinal contents, a precaution which does not delay the pathologist for more than a few minutes. If any of the other methods of the preservation of the grafts are used a sterile autopsy must be performed. This necessitates a complete sterile set-up including gowns, gloves, masks, drapes, and instruments. This often delays the pathologist for almost an hour, which is not conducive to smooth cooperation. After removal of the grafts, sterile procedures must be continued and the possibilities for contamination are unlimited during the preserving process.

At autopsy the vessels desired for grafts are the aorta and its major branches. The aorta is removed from a point just distal to the origin of the coronary arteries down to, and including the iliac arteries, and all branches are left at least 1.5 cm. in length to that they may be ligated prior to insertion of the graft into the recipient. It is desirable to obtain the larger branches of the aorta with as much length as possible. The aorta does not have to be obtained in one piece, but it is advisable to have the sections as long as possible. All excess tissue is removed down to the adventitia of the vessel. From this point on the procedure varies, depending upon the method of preservation used.

Methods of Preservation

Only the more important and more widely used methods of preservation of arterial homografts will be mentioned here; there are many minor variations in each. The method of preservation used depends entirely upon the individual choice, the amount and type of resources available, and the purpose for which the graft bank has been established.

The tissue culture method of preservation of arterial homografts was advocated by Gross, Bill and Pierce¹ in 1949; they have since abandoned this. The graft is obtained at sterile autopsy, washed in sterile saline or a modified Tyrodes solution, and is then placed in a modified Tyrodes solution containing 10 per cent serum and a combination of antibiotics, usually penicillin and streptomycin. The bottles containing these

grafts are maintained at 1-4° C. usually in the blood bank refrigerator. These grafts are viable and remain so for four to six weeks, at the end of which they are discarded. This calls for a constant supply of graft material which is often difficult to obtain. Moreover, the solution used to wash the graft after autopsy and samples of the culture media must be continuously re-examined for anaerobic, aerobic and fungal growth. The appearance of any organism requires that the graft to be discarded.

This type of bank has some advantages and many disadvantages. The only advantages are that the bank is inexpensive to establish and the tissue is kept in a more physiological state. On the other hand, a sterile autopsy is required which in itself requires a considerable expenditure of time and effort. The culture media is sterilized by a Seitz filter which is also inconvenient. There are numerous chances for contamination and this, together with the short period of storage, requires that a constant source of graft material be available.

The possibility of power failure and interference with refrigeration must be considered. The disadvantages far outweigh the advantages of this method and it is not now widely used in this country. Apparently the Mayo Clinic does still use this method, however, combined with a reserve of arterial homografts merely deep frozen in serum.⁶

The freeze-drying method of preserving arterial homografts. This is one of the better methods and was advocated by Hyatt, Turner, Bassett and Pate.⁵ This procedure also requires a sterile autopsy, a definite disadvantage. After removal from the body the graft is placed in a sterile tube. This tube is then immersed in a mixture of alcohol and dry ice and the graft is maintained at -80° C. for five minutes. The tube is then packed in dry ice and attached to a vacuum pump where a constant vacuum is maintained at minus 300 microns pressure. After twelve hours the tube is removed from the dry ice and allowed to return to room temperature. Suction is continued for twenty-four more hours, during which time practically all of the water is removed from the tissue by sublimation. The tube is then

hermetically sealed and may be kept at room temperature for as long as two years. Prior to surgery the tube containing the graft is sterilized with Zephiran and the tube is opened under water. This is done so that the tissue will absorb the water and resume its normal appearance. If the tube is broken above the water and the graft dropped into it, it will only float and great difficulty will be experienced in an attempt to wet the tissue.

The advantages of this method far outweigh the disadvantages and therefore is widely used in this country. The most important advantage is that the graft may be stored at room temperature. Results with these grafts are as good as those of the tissue culture method. The disadvantages are the sterile autopsy, the rather complicated procedure required for preservation, and the expense of an extra technician and the apparatus for freeze-drying the graft.

The ethylene oxide method of preserving arterial homografts. We are now using this method* and consider this to have certain advantages over other methods. Most important, the graft is taken at a routine, non-sterile autopsy. This is an advantage which cannot be overestimated. The graft is then placed in a tube containing ethylene oxide (which acts as a sterilizing agent) for thirty minutes. Precautions are taken to prevent ignition of the ethylene oxide due to its explosive qualities. After this period the ethylene oxide is decanted off and a sterile covering is applied to the tube. The graft is then quick frozen and the same freeze-drying procedure as above is carried out. These grafts may also be maintained at room temperature for two or more years. The disadvantages are the expense of the ethylene oxide (comparatively small), the somewhat complicated procedure of preparation, and the extra expense of a technician and necessary equipment for freeze-drying. We have, however, reduced this last expense by merely using a small vacuum pump which works as well as more costly, especially made freeze-drying apparatus.

High voltage cathode ray sterilization of

grafts. This procedure certainly deserves mention although it is not practical for most banks. This method advocated by Meeker and Gross⁷ is now used at the Massachusetts General Hospital with good results. The grafts are taken at routine non-sterile autopsy and then stored in polyethylene bags in a dry ice refrigerator. The grafts are then sterilized at any convenient time prior to their implantation with high voltage cathode rays. The dosage recommended by Meeker and Gross is 1.5–2.0 million R.E.P. (Roentgen Equivalent Physical Units.) This dosage insured sterilization without tissue damage. To be used there grafts are merely removed from the bags and immersed in saline solution 20 to 30 minutes prior to surgery.

This method has the advantage of its extreme simplicity, and the freedom from the necessity for sterile autopsy. Its main disadvantage and the one that makes it impractical in most centers is the high voltage cathode ray machine that is necessary. It is, however, of interest and may become more widely used in the future.

Indications for Use

Other uses of arterial homografts will doubtless be developed, as the boundaries of vascular surgery are widened. At present arterial grafts are perhaps most widely used in the correction of coarctation of the aorta. It is generally agreed that if the lesion can be repaired by mobilizing the aorta and end-to-end suture it is highly desirable. Often, however, this is not possible due to the length of the stricture. In these cases arterial homografts are used, with good results.³

The replacement of sections of vessels containing aneurysms offers another use for grafts, particularly if the aneurysm cannot be repaired by other methods. Brown, Hufnagel, Pate and Strong¹ also have used grafts with considerable success in thrombo-obliterative disease of the aorta and iliac arteries. Their results are encouraging and give promise for the future. Traumatic lesions of vessels that are too large to be sutured primarily and arteriovenous fistulas may also be repaired with grafts. This has been of considerable benefit in time of war.⁸ Swan and

*Our procedure has been patterned after that employed in the Department of Surgery, Vanderbilt University.

Morfit¹ suggested the use of arterial homografts to replace sections of arteries which were removed during radical resection of malignant growths, and reported success in two of their three cases.

Summary

The criteria for selection of donors for arterial homografts are presented, together with a review of the more widely used methods of preserving these grafts. The results are essentially the same at surgery regardless of the method of preservation used. Therefore, the method used depends upon individual preference and resources. Indications for use of the grafts are mentioned.

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In the era before antibiotics and thoracic surgery, rupture or perforation of the esophagus ended more often than not in death. Since the prognosis now is so altered, the diagnosis must be entertained in certain situations so that early treatment may prove successful.

PERFORATION OF THE ESOPHAGUS*

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Introduction

Perforation of the esophagus due to trauma or malignant tumor is not uncommon, but spontaneous perforation or rupture of this organ is rare. Only during the past decade has the ante-mortem diagnosis of spontaneous perforation been made in a significant number of instances. The first case was credited to Walker in 1914.¹ Since Boerhaave described the post-mortem findings of this entity in 1724² only 92 cases could be collected from the literature in 1951.³ Of these 92 patients with spontaneous perforation there was a mortality rate of 82 per cent with all of the survivors occurring in patients treated subsequent to 1944. The mechanism of perforation in the traumatic or instrumental type is different from the mechanism that produces spontaneous perforation but the principles of treatment coincide somewhat so that the discussion may include both.

Esophageal perforation, traumatic or spontaneous, is a grave surgical emergency and, if allowed to progress, almost invariably produces complications that make the prognosis poor. For this reason it is essential that we learn to think of this condition early in the differential diagnosis of upper abdominal and thoracic emergencies.

Etiology and Pathology

Traumatic perforation of the esophagus may occur in the cervical, upper thoracic, or lower thoracic portion as a consequence of esophagoscopy for foreign body, foreign body without instrumentation, dilatation of a benign esophageal stricture, diagnostic

esophagoscopy, or direct trauma to the upper abdomen and thorax. Perforation due to direct trauma to the abdomen or thorax is rather rare and is closely related to spontaneous rupture since both of these catastrophies occur in an apparently normal esophagus and mediastinum which, without predisposing inflammation, is unprepared histologically to resist sudden and widespread contamination with gastric contents and bacteria.

The perforation due to a foreign body or instrumentation is usually small as the result of an initial pinpoint opening made by erosion of a foreign body through the esophageal mucosa. This defect may be enlarged by the manipulation of the foreign body or by the esophagoscope.

Spontaneous perforation, on the other hand, occurs almost always in the lower one-third of the esophagus on the left posteriolateral wall. Vomiting or retching appears to be the precipitating factor in the vast majority of cases. A history of the recent ingestion of a large meal or alcohol followed by forceful vomiting is often obtained. An association between intracranial disease and spontaneous rupture of the esophagus was mentioned in 1932 by Cushing⁴ and was later stressed by Fincher and Swanson.⁵

The mechanism of spontaneous rupture is generally agreed upon although the predisposing factors still promote argument. It appears that the esophagus perforates in its weakest portion when it is suddenly overdistended by stomach contents expelled by violent gastric contraction, the esophagus being filled more rapidly from below than it can empty into the hypopharynx. (Fig 1, A and B.) In 1884 McKenzie⁶ removed the normal esophagus at fresh autopsies and distended the hollow viscus with water after the ends were made secure with ligatures.

*Read before the Meeting of the Tennessee Thoracic Society and Tennessee Chapter, American College of Chest Physicians, April 12, 1954, Nashville, Tenn.

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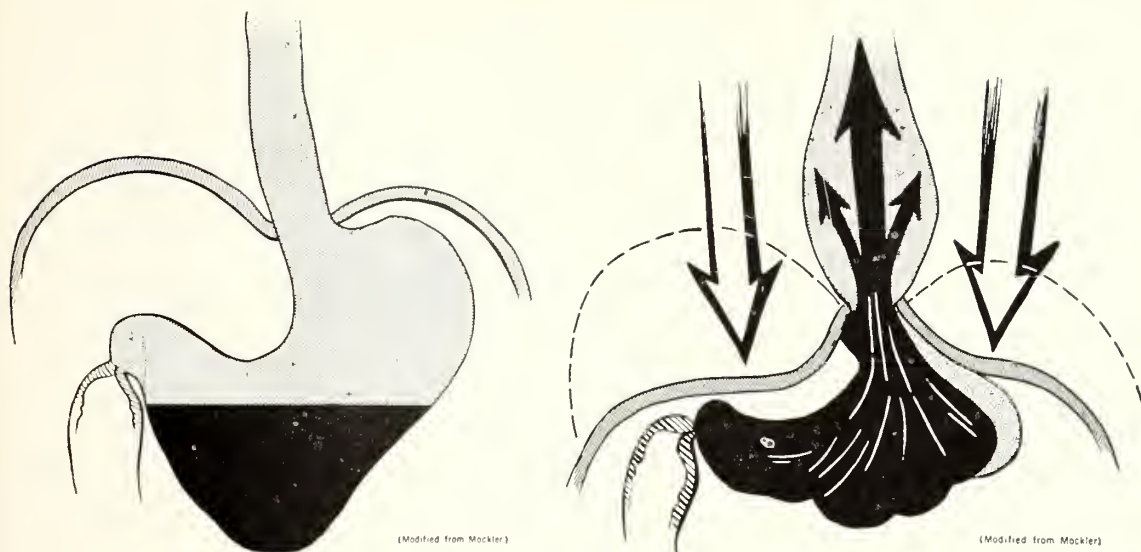


FIG. 1. (A) Normal stomach filled with food and liquid. (B) Diagrammatic representation of forceful vomiting showing downward thrust of diaphragm synchronous with violent contraction of stomach and relaxation of cardia.

With an average pressure of seven pounds of water, rents were produced consistently in these esophagi which corresponded in appearance and anatomical location with those seen after spontaneous rupture. McKenzie's conclusions⁶ are of interest because no one has improved upon his observations. They were as follows: (a) rupture by overdistention due to direct pressure always results in a longitudinal direction; (b) the lower portion of the esophagus ruptures before the upper part; (c) the mucous membrane offers a greater resistance to the strain than does the muscularis.

The act of vomiting stands out as the prevalent theme in practically all cases of spontaneous esophageal rupture. In the few cases in which vomiting has been absent there have been other acts producing a sudden increase in intra-abdominal pressure such as the labor of childbirth,⁷ convulsive seizure,⁸ and straining at defecation.⁹

Whether or not it is necessary for obstruction of the upper esophagus to be present during the early phase of vomiting so as to increase the intraluminal tension is still a matter of conjecture. Rupture may occur in the lower esophagus when repeated attempts at vomiting fail to dislodge a foreign body of the upper esophagus. Applying the same principle it is conceivable in an alcoholic or extremely ill person that reflex relaxation of the cricopharyngeous fails to

coincide with the upward onrush of stomach contents. This results in a momentary markedly increased intraluminal pressure released only by rupture or by sphincteric relaxation.

In attempting to explain the occurrence of spontaneous rupture consistently in the lower portion of the esophagus, it may be recalled that only smooth muscle is present there whereas striated fibres are found in increasing numbers as one proceeds cephalad. The longitudinal smooth muscle fibres spread out as they approach the cardia thereby resulting in poor support for the distended mucous membrane. Also the supporting structures of the lower esophageal segment are not as abundant nor are they in close contact with this organ.¹⁰

Some investigators have suggested that intrinsic esophageal disease such as peptic esophagitis predisposes to spontaneous rupture¹¹ but pathologically this has not been borne out. Poor nutrition or some defect in protein metabolism which weakens the esophageal wall is thought by others to be the underlying cause.¹¹ Rupture into the left pleural cavity may occur with the initial episode or it may follow a mediastinitis with pleural perforation.

Symptoms and Signs

The symptoms and signs of traumatic perforation are usually less dramatic than those

following spontaneous esophageal rupture. In the former instance a history of recent ingestion of a foreign body or instrumentation should assist greatly in the diagnosis. Pain in the substernal region or back followed by dyspnea, elevation of temperature, occasionally accompanied by a chill, and frequently emphysema in the base of the neck, together with a history of foreign body or of instrumentation should establish the diagnosis so that appropriate measures may be instituted early.

The early diagnosis of spontaneous perforation, however, is usually more difficult. A history of *vomiting* or *retching*, which may occur after the ingestion of a large meal or of alcohol, followed by severe and sudden substernal or epigastric pain which frequently radiates through to the back, is considered as classical. The pain is characteristically excruciating and is usually unrelieved by only one injection of opiate. The patient frequently describes a bursting or tearing sensation in the substernal region with a feeling of impending death. Vomiting may persist and *hematemesis* subsequent to rupture is not uncommon. Extreme *thirst* is experienced by many of these patients often before there is evidence of vascular collapse. The onset of *dyspnea* and *cyanosis* may be sudden or gradual but in most instances present themselves as late manifestations. After a cursory examination the internist will often make a diagnosis of coronary occlusion while the surgeon will think first of acute pancreatitis or perforated peptic ulcer.

The physical signs, however, can make one think initially of esophageal perforation. *Shock*, mild or severe, presents itself in approximately 75 per cent of cases and may progress rapidly with the passage of minutes or a few hours. *Tachycardia* and increased respiratory rate are invariably present. *Cyanosis* is not a constant finding but frequently varies with the peripheral vascular collapse. The initial symptoms usually focus the attention on the abdomen but abdominal signs are not indicative of disease consistent with the clinical picture of prostration, dyspnea, and shock. *Epigastric tenderness* varies greatly, with or without abdominal muscle spasm, but both are present in the ma-

jority of cases. Mediastinal or subcutaneous *emphysema* is not a consistent finding although when present is almost pathognomonic of esophageal rupture. The subcutaneous air appears at the base of the neck but is frequently a late manifestation.

Chest findings on physical examination may be absent during the first few hours particularly if the mediastinal suppuration has not perforated into the pleural cavity. *Widening* of the mediastinum with air and a fluid level seen roentgenologically may clinch the diagnosis. After pleural contamination, however, the finding of a left *hydropneumothorax*, left *pleural effusion* or *empyema*, or bilateral pleural involvement is usually present. It is evident that the early diagnosis of esophageal perforation depends largely upon the awareness that such an entity may exist when considering the differential diagnosis of thoraco-abdominal emergencies. (Figs. 2, 3, 4, and 5.)

Since much of the early diagnostic accuracy may depend on X-ray findings it should be mentioned that an Iodochloral or *thin barium* "swallow" may confirm the suspicion of perforation. Aspiration of the pleural space often produces gastric juice, bile, or ingested food particles. Methylene blue or other dye may be given by mouth for diagnostic purposes.

Differential Diagnosis

In the differential diagnosis one must consider the intra-abdominal emergencies of acute pancreatitis, perforated viscus, volvulus, intestinal obstruction, and acute cholecystitis. Intrathoracic emergencies such as coronary thrombosis, pulmonary infarction, dissecting aneurysm, and spontaneous pneumothorax can be excluded only by careful continuous observation. Chest roentgenograms which demonstrate a hydropneumothorax should eliminate all except the spontaneous pneumothorax and usually the pain, systemic reaction, and pleural fluid are all prominent enough to exclude this also. Laboratory data, including blood analysis, are usually of little aid since leukocytosis within a few hours is common to many of the conditions mentioned above.

Treatment

Esophageal perforation must be consid-

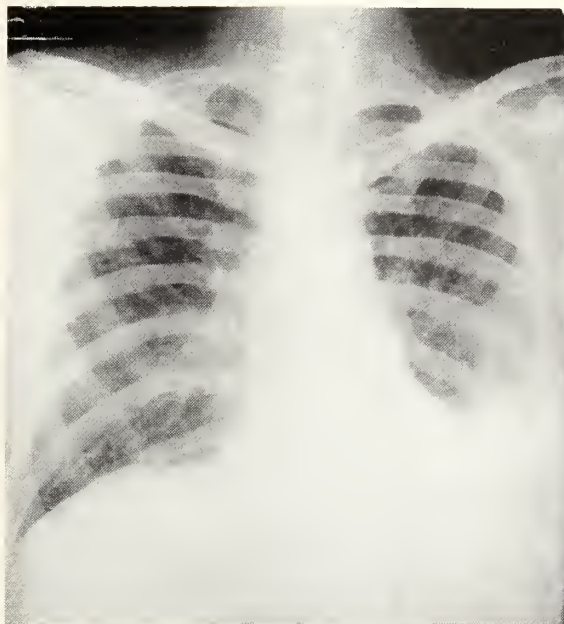


FIG. 2. Effusion into the left pleural cavity 6 hours following perforation of esophagus during esophagoscopy for foreign body.

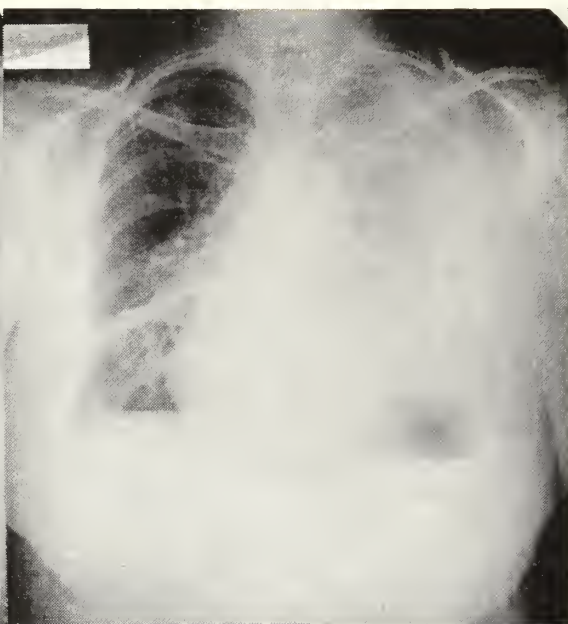


FIG. 3. Left pleural effusion with hydropneumothorax and atelectasis in the right lower lobe 20 hours following traumatic perforation.

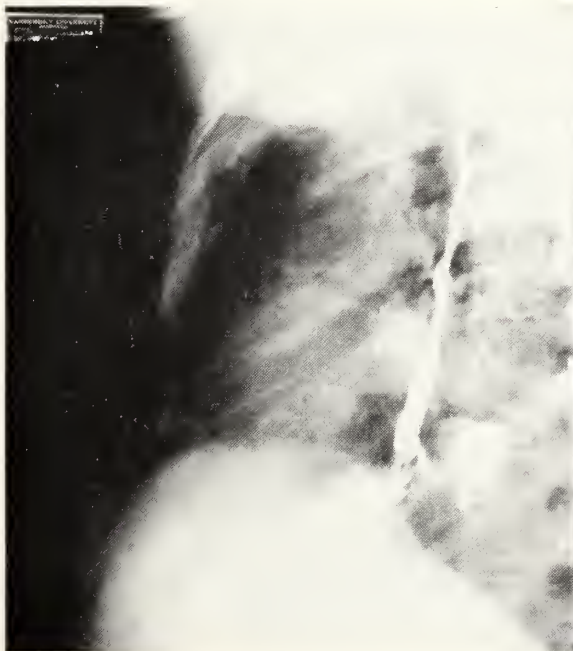


FIG. 4. Examination of esophagus with thin barium showing the rent in the lower one-third and extravasation of barium into mediastinum.

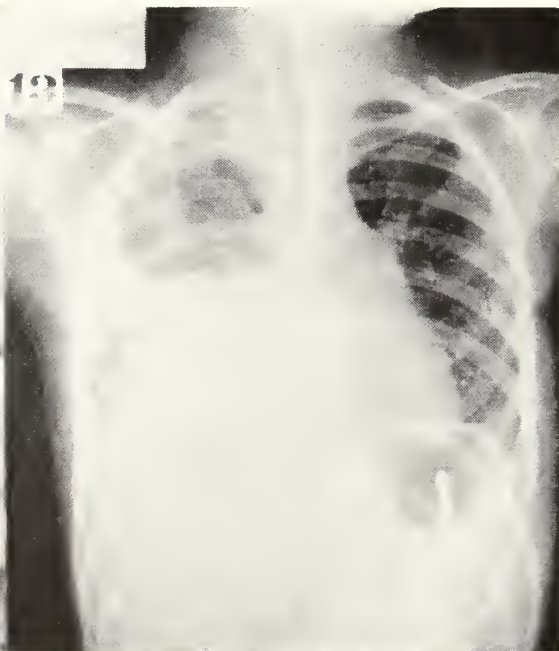


FIG. 5. Traumatic perforation into right pleural cavity occurring with dilatation of a lye stricture in the middle one-third of esophagus.

ered as an extreme surgical emergency. The principles concerned in adequate therapy resolve themselves into the following:

1. Supportive measures such as parenteral fluid and electrolyte infusions, whole blood transfusions, and nasal oxygen are usually essential.

2. Immediate thoracotomy should be carried out so that closure of the esophageal defect may be accomplished. The proper approach is through the eighth rib on the left in most cases. Closure of the esophagus with interrupted sutures in two layers is desirable. Thorough cleansing of the left

pleural space with saline should be attempted with adequate drainage of the mediastinum and pleural cavity. The end of the thoracostomy tube which is left in the pleural space should be near but not against the mediastinum and a water-seal type of closed drainage insures early lung expansion.

3. A Levine tube in the stomach, with the maintenance of constant suction, makes gastric distention and regurgitation unlikely.

4. Massive doses of antibiotics should be instituted as soon as the condition is recognized and should consist of aqueous penicillin and streptomycin intramuscularly or intravenous administration of a broad spectrum bacteriostatic agent.

Although gastrostomy has been advocated by some,¹³ it is rarely necessary since an indwelling Levine tube for suction initially may be used later for feeding. As the general condition of the patient improves he may receive tube feedings per Levine tube in four to five days. In ten or twelve days a soft diet can usually be taken safely. If the esophago-pleural fistula persists or recurs the thoracostomy tube may have to be removed gradually and with great care. Early expansion of the lung with an adhesive pleuritis is desirable since obliteration of all dead space in the chest minimizes the chance for persistent empyema or esophageal fistula.

Some patients have been treated successfully with pleural drainage alone through a thoracostomy tube¹⁴ and without operative closure of the esophageal defect. Generally this may be the procedure of choice in most patients who are seen after 24 hours have elapsed since perforation. It is logical, however, that an attempt at closure of the esophageal defect should be made in every case if the patient's condition permits.

The principles of therapy apply whether the perforation is instrumental or spontaneous in type. Some cases of instrumental perforation with an apparently small esophageal rent and minimal symptoms and signs can be handled successfully with antibiotic

therapy and supportive measures alone. This is hazardous, however, and these patients should be chosen with extreme caution.

Summary

Perforation of the esophagus, traumatic or spontaneous, presents a grave emergency which may present itself suddenly to anyone who engages in the practice of medicine. Since the entity of spontaneous perforation is being recognized with greater frequency and the treatment is more successful, it is essential that all physicians become more familiar with its early symptomatology. If we learn to include it in our considerations in differential diagnoses the prognosis will improve even more.

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CLINICOPATHOLOGIC CONFERENCE

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Intestinal Obstruction Produced by Meckel's Diverticulum

Case. This 28 year old white male shortly before admission developed productive cough, weight loss, and was easily fatigued. Chest x-ray done by his local physician disclosed a small infiltrative lesion in the left upper lung field, and a seven-day sputum was positive for acid-fast bacilli on smear. The patient was referred here for therapy. Sputum examinations again were positive for acid-fast bacilli on smear and culture. On bed rest alone he improved rapidly and progressively, and his sputum became negative for acid-fast bacilli on smear and culture. He gained 20 pounds and was discharged to convalesce at home and to report for recheck examination in 3 months.

The *past history* revealed that a year previously the patient had suffered two episodes of gastro-intestinal hemorrhage with passage of large, dark, bloody stools. There was some cramping para-umbilical pain along with these episodes. The patient was in the Navy at this time, and full G. I. X-ray studies were said to reveal no significant changes. He was told that he was allergic to milk and that this was the cause of his hemorrhages. He refrained from drinking milk and had no further trouble until his second admission to this hospital. He had suffered with migraine headaches for years.

Readmission. The patient was readmitted, 3 weeks after discharge, following a gastro-intestinal hemorrhage. Five days before this second admission he had been awakened at night by cramping upper abdominal pains which generally abated. The night before admission he again developed this cramping pain and several hours later passed two large tarry stools which contained some red blood also. There had never been any hematemesis.

Examination. The patient was described as a well-developed and nourished 28 year old white male. B.P. was 100/60 and pulse 88. The lungs were clear on percussion and auscultation. The abdomen was soft and non-tender; no masses were palpated. Rectal examination disclosed some tarry stool. The remainder of the physical examination disclosed nothing of note.

Laboratory. Initial study showed RBC of 4.5 million, Hgb. 14.0 Gm., WBC and differential count normal. Four days later the RBC was 2.9 million and the Hgb. 8.4 Gms. Following numerous transfusions the RBC became 5.2 million and Hgb. 15.2 Gm.

X-Ray Studies. Chest X-ray disclosed some residual fibro-calcific scarring in the left apex.

G. I. series, small intestinal series, and barium enema films were negative. Sputum examinations were negative for acid-fast bacilli on smear and culture.

Hospital Course. Following his admission the patient continued to have occasional "tarry" and "grape jelly-like" stools and became anemic. The RBC rose with transfusions but the patient's general condition seemed to improve slowly. Hematological study disclosed no blood dyscrasia. Scratch tests for allergy did not lend support to an allergic basis for the hemorrhage. Because he was becoming gradually weaker and was losing weight, exploratory laparotomy was decided on and done.

Discussion

DR. J. H. KEHNE: The problem presented by this 28 year old white male is clearly defined by the past gastro-intestinal history and the present illness. This is characterized by three important features: (1) intermittent intestinal hemorrhage achieving major proportions, (2) para-umbilical cramping associated with each hemorrhage without signs of peritoneal irritation, and (3) the complete absence of interval intestinal symptomatology with apparently normal studies of the upper and lower gastro-intestinal tract on two occasions.

The intestinal bleeding on each occasion was of major proportions and during the present episode resulted in a decrease in hemoglobin of 5.6 grams during a four-day period. This suggests a slow continuous hemorrhage involving vascular channels of small size corrected by multiple transfusions as contrasted to the hemorrhages associated with peptic ulceration of stomach, duodenum, or bleeding esophageal varices. The stools were described as "large dark bloody stools" and "occasional tarry and grape jelly-like stools". The absence of hematemesis and the description of hemolyzed blood mixed with some fresh unhemolyzed blood localizes the bleeding to the distal small intestine or proximal colon.

The abdominal distress experienced by the patient was described as a cramping para-umbilical pain during each attack and was followed later by the bleeding. These pains were non-radiating, intermittent and, one is led to believe, not of great severity. The absence of associated nausea and vomit-

ing, and the absence of interval symptomatology indicate that the patient had a partial intermittent intestinal obstruction caused by some intraluminal or extraluminal lesion which developed surface erosions on occasions resulting in hemorrhage. The normal intestinal studies on two occasions and the intervals between attacks indicate that the lesion was small, benign, and possibly extraluminal. This same reasoning, in addition to the absence of signs of peritoneal irritation, the absence of a palpable mass, and the lack of x-ray evidence of intestinal dilatation, can be advanced to exclude acute or chronic inflammatory lesions of the gastro-intestinal tract.

By a process of clinical exclusion then, the patient appeared to have a benign extraluminal or intraluminal lesion localized to the *distal small intestine*, which resulted in intermittent incomplete obstructive symptoms and hemorrhages of a slow insidious type which with the passage of time assumes major quantitative proportion. The problem then resolves itself into a discussion of those lesions which can be found in this portion of the intestinal tract. The lower intestine has been called the silent area of the enteric system and the history is quite characteristic of benign lesions of this region. The negative enteric x-ray studies need not detract from the discussion inasmuch as such diagnoses are made most frequently by the surgeon at the operating table. Such lesions will not be diagnosed roentgenologically unless frequent comparative films are made during the course of passage of the barium through the bowel in an attempt to demonstrate the characteristic transitory segmental luminal distortions which may occur.

The most common condition of the small intestine which will produce the clinical picture thus presented is a *Meckel's diverticulum*. This anomaly occurs most frequently in males and is reported in humans with an average frequency of 2 to 3 per cent. Most specimens reported in adults are encountered and removed during abdominal explorations for other conditions. It has been emphasized by numerous authors that the complications of Meckel's diverticulum are (1) acute diverticulitis, (2) hemorrhage,

(3) intussusception, (4) intestinal obstruction, (5) neoplastic change, and (6) torsion. Each is related to some unusual variation from the average diverticulum such as narrowed lumen, ectopic gastric mucosa, large diverticular diameter, congenital omphalomesenteric band, or persistent mesentery, all of which are encountered in only a small percentage of the total specimens examined. The complications of Meckel's diverticulum are infrequent and occurred only in 5.4 per cent of the total number of Meckel's diverticula removed at the Lincoln and Des Moines V. A. Hospitals. A discrepancy is immediately noted between the number of complications of Meckel's diverticulum as presented by Ladd and Gross and the adult series studied elsewhere. It is common knowledge that a Meckel's diverticulum can produce symptoms at any age in life, but complications occur most frequently early in life with 45 per cent of the Ladd and Gross series occurring during the first two years of life. It is apparent that the clinical significance of this anomaly is of greater surgical importance in pediatric surgical diagnoses than in surgical diagnoses among adults. Hemorrhage complicating the presence of a Meckel's diverticulum is most commonly encountered when heterotrophic gastric mucosa is present. This was encountered in only 5.6 per cent of the specimens examined in the Lincoln-Des Moines series and had resulted in true peptic ulcerations of the marginal enteric mucosa at the base of the diverticulum. Despite the clinical rarity of this condition the presence of a Meckel's diverticulum in 2 per cent of the adult population is adequate justification for considering it in the differential diagnoses of all cases of acute surgical abdomen, intestinal obstruction or intestinal hemorrhage.

As compared to tumors of other parts of the gastro-intestinal tract *benign tumors of the small bowel* are far outnumbered and this has resulted in the small intestine being referred to as the silent region of the abdomen. The symptoms produced by these benign growths depend mainly on the type of tumor and the location of the tumor. In general, the symptoms produced

are (1) obstruction, (2) bleeding, and (3) symptoms resulting from local irritability. The obstruction produced by these benign tumors is either caused by intussusception of the bowel or by local compression and encroachment upon the bowel lumen. Intussusception usually presents acutely with severe cramping pains, nausea, vomiting, and objective findings of intestinal obstruction. Blood and mucus may be found in the bowel passages. The paucity of acute obstructive symptoms suggests that intussusception was not the mechanism in this case. However, the lesions which result in luminal compression cause symptoms of much less severity and depend largely on the size and major direction of the tumor growth as related to the lumen. Symptoms range from those of recurrent abdominal distention, constipation, and mild cramping pains to interval cramping with concomitant hemorrhage as seen in this case. Bleeding has been reported by most observers to be the most consistent symptom and occurred in about 50 per cent of diagnosed benign small bowel tumors. Hemorrhage is usually the result of peristaltic traction on the tumor causing surface erosion and abrasion. Leiomyomas and adenomas are probably the most commonly encountered benign tumors of the small bowel. Each type may present a predominantly intraluminal or extraluminal growth, and intestinal hemorrhage is frequently secondary to each type. Fibromas, lipomas, pancreatic rests, hemangiomas, lymphangiomas, and neurofibromas associated with or without von Recklinghausen's disease are infrequently encountered but do occur and may present symptoms similar to those described, depending again on the size and main direction of growth of the tumor. A small pedunculated benign tumor of the leiomyoma, adenoma, or neurofibroma type could well explain the symptomatology presented by this patient. Any further attempt to correlate symptomatology to specific tumor cell type is gross folly inasmuch as case reports of single and multiple benign tumors of the same cell type indicate that the direction of growth may vary considerably in adjacent lesions of the same type within the bowel wall.

Considering the size of the small intestine, *malignant tumors* are infrequently encountered and about 400 cases of adenocarcinoma of the small bowel have been reported. These usually arise from polypi and may infiltrate, stenose and result in symptoms of intestinal obstruction. Intussusception and perforation are rare complications. Usually metastases have occurred long before surgery has been advised since the fluid content of the small bowel makes obstruction a late sign. Lymphosarcoma is more frequent in the small intestine than in the large intestine and about 200 cases have been reported. This usually involves a longer segment of bowel than other malignant tumors and frequently involves the entire circumference. Included in this group of tumors of the small bowel are the carcinoid tumors arising from the Kultschitzky cells. These are firm yellowish tumors appearing as nodules in the submucosa at any point in the circumference of the bowel. Although usually benign in the appendix, those arising in the bowel are potentially malignant, manifesting not only local invasiveness but giving rise to gland and liver metastases in 20 to 40 per cent of the reported cases. The lesions are multicentric in origin in approximately one-third of the reported cases. The nodules vary widely in size, and gross or microscopic evidence of ulceration of the overlying mucosa has been reported in practically every case observed by Dockerty and Ashburn. These ulcerations are shallow, explaining the relative infrequency of melena. According to Ariel the average age of patients found to have carcinoid was 56 years. The most common clinical picture is that of bowel obstruction. This may be of a low-grade, recurrent, partial obstructive type or may be of sudden onset with typical severe intestinal colic. Reports regarding symptomatology in this group vary widely with Ariel reporting 17 per cent symptomatic, Cameron 36 per cent, and Cooke 17 per cent. About 50 per cent of those lesions showing malignant degeneration have been reported to produce obstruction, in addition to anorexia, cachexia, and weight loss. These lesions are only included for the sake of completeness of dis-

cussion with the realization that although the symptomatology is usually one of more acute obstruction, the low-grade partial obstructive symptoms may occur with each type and may be associated with hemorrhage. The relative infrequency of malignancies of the small bowel, however, makes this an unlikely diagnosis.

A final word must be said relative to the previously established diagnosis of pulmonary tuberculosis and the possibility of a complicating *tuberculous enteritis*. The initial response when treated for tuberculosis, and x-rays of the chest taken during the present hospital admission demonstrate that the patient had a good natural resistance to the disease and that the pulmonary tuberculous process was certainly inactive at the time of the final episode. Tuberculous enteritis is infrequent in the human type of tuberculosis but may cause intestinal involvement by either a blood stream dissemination or a constant bombardment of the intestinal mucosa by ingested bacilli. These become localized within the lymph channels and lymphoid follicles of the intestine thus accounting for the frequent involvement of the ileum and cecum. During the acute stage the symptoms are those of a chronic enteritis with increased bowel irritability, cramps, diarrhea alternating with periods of constipation persisting for many weeks. With the progression of lymphatic involvement circumscribing the lumen of the bowel, hypertrophy and fibrosis follow with resulting areas of stenosis which may be multiple. It is apparent that this fails to parallel the symptoms presented in this case.

In *summary* then we are dealing with a benign lesion of the lower small intestine which could be either extraluminal or intraluminal which resulted in intermittent symptoms of low-grade intestinal obstruction and slowly progressive hemorrhage which achieved quantitative magnitude. It

is felt that the symptomatology is best explained by the most commonly encountered lesion of the small bowel, a Meckel's diverticulum which in this case contained ectopic gastric mucosa. A benign tumor of the leiomyoma, neurofibroma, or adenoma type, either single or multicentric in type, could explain the symptoms presented, but remains a second choice because of the relative infrequency of this type of lesion.

Findings at Operation

DR. J. M. YOUNG: At operation an intussusception of the ileum was present. A Meckel's diverticulum had inverted and produced this intussusception. There was an ulceration at the tip of the Meckel's diverticulum but the structure contained no gastric mucosa. The obstruction was of a chronic partial nature with moderate dilatation and hypertrophy of the proximal ileum.

Meckel's diverticulum is a congenital anomaly resulting when the proximal portion of the omphalomesenteric duct fails to close. About 2 to 3 per cent of humans show this anomaly and it has been estimated that the lesion causes clinical disease in approximately 20 per cent of the people in whom it is found. These complications are hemorrhage, obstruction, intussusception, and acute inflammation in that order of frequency. The anomaly is more common in males. While this diverticulum usually occurs within the terminal three feet of ileum it is very important to remember that it may occur higher up the ileum. The lining of the sac microscopically frequently shows ectopic gastric mucosa, especially in diverticula removed from young children. Also it may show biliary, duodenal, jejunal, or colonic mucosa and aberrant pancreatic tissue. Malignant tumors of this structure are rare and sarcomas are more common than carcinomas.

President's Letter



DR. THOMPSON

Another "first" for the medical profession in Tennessee.

We have recently returned from Huntington, West Virginia, where on October 23 and 24 we had the extreme pleasure of attending, with the Tennessee Delegation,

the Third Conference on Medical Care in the Bituminous Coal Mine Areas.

Your representatives offered the only report of material progress that any State Association put forward for medical care in these regions in our various states. The Chairman of your Liaison Committee to the United Mine Workers had the most important report on the program—and in a most dramatic manner—outlined to the conference and the American Medical Association's Committee on Medical Care for Industrial Workers, the progress of medical care in Pruden Valley, now known as the Clear Fork Valley, where a doctor, dentist and public health nurse furnish to the over 5,000 inhabitants the first real medical care they have ever known; Wartburg, where the community has built a beautiful new clinic and where a young physician just out of the Service has located, at the instigation of TSMA, to care for their medical needs; and lastly at LaFollette where the municipality, through the guidance from the Tennessee Medical Foundation, is building themselves a new municipal hospital.

Your delegation advanced the idea that with certain privileges which we expect as members of organized medicine, we must

assume certain obligations—in this case, the adequate medical care of every individual. Tennessee Medicine offered the Conference an integrated plan for accomplishing the above results. Organized Medicine must assume an active role in the medical affairs of local communities, materially assist, and assure the provision of high quality medical care for all the people covered by the conference.

What has been accomplished in Tennessee was done with excellent co-operation between the Tennessee State Medical Association, The Health Department of the State of Tennessee, The University of Tennessee, Vanderbilt University, the Commonwealth Fund and the untiring efforts of your Liaison Committee. We commend that co-operation, and believe that the energies and interests of many organizations such as Labor groups, city and county governments, women's clubs, lawyers, legislators, the clergy, schools and institutions, farm bureaus, the dental, pharmaceutical and nursing organizations can be united for the contribution of much to the extension of Medical Care.

If we work together in such co-operative endeavors, much can be done to accomplish our original concept: "Organized Medicine can and should assume an active role in the medical affairs of local communities and shall stand in a position to materially assist and insure the provision of good medical care to the people of the State of Tennessee."

A handwritten signature in dark ink, appearing to read "James Thompson". The signature is fluid and cursive, with a large initial "J" and a long horizontal stroke at the end.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

*Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.*

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R. H. KAMPMEIER, M.D., Editor and Secretary
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NOVEMBER, 1954

EDITORIAL

THE RESIDUALS OF VIRAL HEPATITIS

Catarrhal jaundice was thought for many years to represent an acute inflammation in the biliary passages, of the ampulla of Vater or even of the duodenum. But apparently little was known of the pathology. By the time of the early twenties of this century the true nature of the process evolved on the basis of pathologic findings of hepatitis and the recognition of chronic residual change in some of the cases, especially that of cirrhosis.

It was in 1923 that Jones and Minot of Boston published one of the earliest papers on the subject entitled, "Infectious (catarrhal) Jaundice. An Attempt to Establish a Clinical Entity." In twenty-six cases they found several followed by cirrhosis. The development of the needle biopsy in the thirties led to reports of pathologic changes during the course of the disease, namely an increase of connective tissue during the active stages of hepatitis. Some studies of this type followed the course of changes from the acute stage to that of cirrhosis by needle biopsies.

Impetus to the study of the problem of viral hepatitis came with the recognition of serum hepatitis and its demonstration in the yellow fever inoculations in the Army in the early days of the War. The War also focused interest on the whole problem of viral hepatitis both infectious and serum-spread because of localized outbreaks of the disease.

The studies of residuals in small groups may not represent the true incidence and there was much disagreement among students of the disease as to not only the incidence, but also the actuality of cirrhosis as a residual development after viral hepatitis.

Because of the confused situation, a group* at the Veterans Hospital related to the University of Minnesota made an extensive study of the hepatic function some years after an attack of hepatitis. The sampling was carried out in the following manner. Veterans of Army service in the Minneapolis-St. Paul area were studied. From the Army files three groups of cases were obtained. In the first were those who had had viral hepatitis while in service from 1942-1945. Another group were the maximally exposed cases who were in army divisional units having admission rates of from 263 to 560 per 1,000 men per year. A control group were those who served in the continental United States and had no history of jaundice, liver disease, malaria, syphilis, blood or plasma transfusions nor yellow fever immunizations. The study group were successful in getting in for examination, 367 who had had hepatitis, 137 who had been maximally exposed and 212 control cases.

The study involved a history directed to liver disease, past and present, use of alcohol and the nutritional background. A physical examination was done and eleven tests of liver function were performed. These were:—serum bilirubin, thymol turbidity, zinc sulphate turbidity, cephalin flocculation, colloidal red test, serum cholesterol and cholesterol esters, bromsulphalein retention, hippuric acid, galactose tol-

*Zieve, L., Hill, E., Nesbitt, S. and Zieve, Bernice: The Incidence of Residuals of Viral Hepatitis, *Gastroenterology* 25:495, 1953.

erance, urine urobilinogen and urine coproporphyrin. Needle liver biopsies were done in 76 subjects within one to two months of the laboratory studies,—60 in cases of hepatitis and 16 in cases of the maximally exposed.

The results of this study indicate that the incidence of functional abnormalities among those who had had viral hepatitis is no greater than in a control group of healthy young males of the same age. The implications are that in individual cases it is true that acute viral hepatitis may progress to cirrhosis but the findings of the study indicate this is infrequent. Even in 69 who had had multiple or prolonged acute attacks (two had had ascites) no abnormalities were found.

Differences were noted in those tests reflecting changes in proteins or lipoproteins as between hepatitis of the infectious variety and serum inoculated variety. These may have to do with immunological residuals. Abnormalities in the cephalin flocculation and thymol turbidity tests were found to be greater in the hepatitis cases of infectious origin than in those due to serum transmission.

In summary, Zieve and his associates found no greater incidence of disturbed liver function in those who had had viral hepatitis, or who had been maximally exposed than in a control group. Fifty-eight of 60 needle liver biopsies in the post-hepatitis group were normal; 12 of the 16 biopsies in the control group were normal. The several abnormalities in each group were attributed to excessive use of alcohol.

One can conclude that the ultimate prognosis in viral hepatitis, with few exceptions, is good.

R. H. K.



STUDENT AMERICAN MEDICAL ASSOCIATION

This organization has now reached maturity and is standing on its own feet. At the "dean's meeting," the annual meeting of the Association of American Medical Colleges, at French Lick Springs in October, a progress report was made. R. F. Staudacher, Editor and Business Manager of the Student American Medical Association,

announced that the organization was now financially independent of the American Medical Association which had underwritten it in its initial stages. Thus there has been a rapid and most satisfying growth of the Association since its establishment in 1950.

At the time the Student American Medical Association was formed, there were murmurings of those not friendly to the A. M. A. that "the union" was really "going to get them young." It was felt in some quarters that this was a method to indoctrinate the budding physician and to mold him in the ways of organized medicine. No one is more jealous of the prerogatives of reason than your editor, and if this had been the essential purpose of the Association he would have disapproved also of its organization.

No experienced physician need be told that the young mind is impressionable, that without the balance of experience it is easily influenced by apparent wrongs, or wrongs magnified out of perspective. The intellectual liberalism common among college students is an expression of this idealism, a stage that some of the readers may have experienced in the Mencken days. One would not have it otherwise, for all of us hope that at least a good modicum of idealism is the motivating force in those entering the practice of medicine. (Only with experience and maturity does the viewpoint change to a blend of idealism, cynicism, materialism and practicability.)

In the years preceding the organization of the Student American Medical Association there were influences in the cities of the eastern seaboard which were finding fertile soil in the liberal idealism of our young medical people. Internes were organized to oppose their use as "slave labor" and threatened strikes, and actual strikes occurred. Without condoning the use of internes as a pair of hands without a stimulating program of training and education, one feels that these influences were evil in taking advantage of and in stifling idealism and planting instead cynicism and materialism, and in undermining the foundations of those factors which have made American medicine great and the American way of

life. Admittedly there are cracks in our edifice, but surely it is better to attempt repair rather than to widen them.

How much these facts had to do, if anything, with the organization of the Student American Medical Association is not known to the writer. Nevertheless it has offered, we see, most successfully an organization to our medical undergraduates for their collective and organized interests, a forum in the local chapters for debate and self-expression.

The activities of the Association have included a successful Journal now in its third volume, representation to the Committee on the Matching Plan for internships, representative to the A. M. A. House of Delegates as observers and as reporters, an annual meeting and the recent development of an insurance program which has resulted in placing \$8,000,000 of insurance in force. Only a few of the medical schools of the country do not have chapters of the Association. No doubt, sooner or later chapters will be established at these medical schools.

The organization has thus been cut from the apron strings of the A. M. A. after less than four short years. This was recognized by an extract from the minutes of the August 27 meeting of the Board of Trustees of the A. M. A., as follows:

"The Board carefully considered the action of the Student American Medical Association in assuming the entire responsibility for its affairs, with special reference to accounting and advertising, and approves this action with mixed feelings. Primarily, the Board is proud of the fact that this Association has become self-supporting in such a short period of time; on the other hand, it regrets that the intimate relationship between the two organizations in their daily activities, although not terminated completely, will no longer be as close. The Board, however, wishes every success to this youthful association." R. H. K.

DEATHS

Dr. Richard A. Cramer, aged 34, Oak Ridge, died from injuries received in an automobile accident on September 24, 1954.

Dr. Sam J. Fentress, aged 68, Nashville, died October 17 in St. Thomas Hospital as a result of a heart condition.

Dr. J. Sumpter Anderson, aged 60, Nashville, died September 21 at his home from a heart attack. Dr. Anderson was a civic leader and past Potentate of Al Menah Shrine Temple.

Dr. B. B. Montgomery, Gatlinburg, aged 84, died October 15 in Jefferson City Hospital. His death was attributed to a stroke. He was a former State Representative from Sevier County.

Dr. James Albert Butler, aged 80, Algood, died in Cookeville General Hospital on October 10 after a brief illness.

Dr. O. D. Miller, Tazewell, aged 75, died October 26 at his home in the Lone Mountain Community.

Dr. John Knox Freeman, 82, Bell Buckle, died October 23 at his home.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis and Shelby County Medical Society

At its meeting on September 7, the following Symposium on Acute Renal Failure was presented:

"Etiology and Pathologic Physiology" by Dr. Richard L. Wooten; "Medical Management" by Dr. Phil E. Orpet; "Therapy by Dialysis" by Dr. Eugene J. Spiotta.

Nashville Academy of Medicine and Davidson County Medical Society

A dinner meeting was held on October 27 as part of the program of the Nashville Medical Assembly. Dr. J. Robert Teabeaut, II, of the Department of Pathology, University of Tennessee, presented a talk on "The Role of Medical-legal Pathology in Medicine."

Roane County Medical Society

The program of the October 25 meeting consisted of showing the film on "The Management of Hypertension" which was presented by the American College of Physicians on a nationwide, closed-circuit television symposium.

Chattanooga and Hamilton County Medical Society

"Acute Medical Emergencies" was the topic discussed at the regular meeting on October 7th. Dr. Carl H. Hartung was

moderator, other participants being Dr. Stuart P. Smith, Dr. J. B. Phillips and Dr. Wm. R. Buttram, Jr.

Consolidated Medical Assembly

Dr. Ralph Bowers, chief of surgery at Kennedy Hospital, Memphis, addressed the society on the subject "Malignant Mole" at the regular monthly dinner meeting on October 5th.

Knoxville Academy of Medicine

Dr. Frank H. Bethell, of the Department of Medicine of the University of Michigan presented a discussion of "Recent Developments in the Treatment of Leukemia and Lymphoma" at the meeting of October 5th.

At a special meeting of the Knoxville Academy membership, held October 28th at Deane Hill Country Club, the president of the Tennessee State Medical Association, Dr. John R. Thompson, Jr., of Jackson, Mr. J. E. Ballentine, Executive Secretary and Mr. Ed Bridges, Public Service Director of The Tennessee State Medical Association reported on Activities, and Benefits of Membership, in the National, State and County Medical Societies.

ernment into an area where it does not properly belong. Asked why HEW was holding up comment on Defense Department's medical scholarship plan, Mrs. Hobby explained it had been brought to her personal attention only within the last month or five weeks.

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Spending on Health

The federal government this fiscal year (July 1954-June 1955) is spending an estimated \$2,141,-681,661 for its health, medical and related activities, which range from construction of multi-million dollar hospitals to maintenance of clinics. The programs are spread among more than a score of departments, independent agencies, and commissions. To make the total more meaningful—

1. It is 8% more than the \$1,775,882,000 budgeted by the federal government last year for the same purpose. (The 8% overall increase does not include that part - 70% - of the Defense medical budget increase that the department estimates is chargeable to operating and construction costs, items not available last year under the accounting procedure then in use.)
2. It is equivalent to 10% of the \$22,000,000,000 that represents the entire U. S. budget with defense security costs eliminated.
3. It is approximately one-sixth of all the money spent in any way for medical and health items in this country annually, including the cost of drugs, dental care, pharmaceutical items, and drug store sundries. (Department of Commerce estimates the total U. S. health bill at \$12,000,000,000.)

NATIONAL NEWS

President Confirms Plans To Resubmit Reinsurance Bill

President Eisenhower, in an address October 21 in New York City, served notice he would resubmit his health reinsurance plan to the next Congress and promised that it would be "an important part of a health program in the great gaps in the field of health." He added: "... we are years behind our potential achievement in the availability and adequacy of health services." His remarks on reinsurance came the same day that Secretary Oveta Culp Hobby in one of her rare press conferences said a Department of HEW task force would soon have a "clearer and better" bill to present to the President. Asked about objections of the AMA to reinsurance, which was defeated in the House this year, Mrs. Hobby stated: "I very much hope that the AMA will see its way clear to support health reinsurance. We have the same objectives, the difference is only one of method." Along with much of the insurance industry, the U. S. Chamber of Commerce and many other groups, the AMA opposed reinsurance as being unnecessary, as holding out false promises and as introducing the federal gov-

Medical-Health Budgets of Federal Departments, Agencies and Commissions for This Fiscal Year

Agency	Fiscal 1955	Fiscal 1954
Department of Defense	\$845,487,500	\$533,311,000
Veterans Administration	748,738,563	747,415,264
Department of Health, Education and Welfare	395,754,000	340,553,000
Federal Civil Defense Administration	28,755,000	26,650,000
Department of Interior	28,023,498	27,258,600
Atomic Energy Commis- sion	27,000,000	26,565,000
Foreign Operations Administration	25,574,300	24,500,000
Department of State	12,607,667	14,127,733
Department of Labor	6,811,000	8,960,000
Federal Employees Health Program	6,000,000	6,000,000
Panama Canal Zone	5,600,000	5,448,600
National Science Foundation	4,795,000	8,000,000
Department of Treasury	2,770,000	2,790,000
Department of Justice	1,300,000	1,326,000
Federal Trade Commis- sion	1,000,000	1,000,000

Commission on Intergovernmental Relations	\$ 414,000	\$ 500,000
Civil Service Commission	358,000	not reported
Department of Commerce	278,133	621,000
National Advisory Committee to Selective Service	190,000	265,000
Commission on Organization of Executive Branch of Government	130,000	500,000
Health Resources Advisory Comm. (approx.)	95,000	91,000
Totals	\$2,141,681,661	\$1,775,882,197
(From A.M.A., Washington Office)		

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Nurses Increase

Nearly 400,000 nurses—an increase of 16,000 since 1950—are now working in the U. S., according to new figures announced recently by the Public Health Service, U. S. Department of Health, Education and Welfare. Estimates based on the latest available figures from the 48 states show a total of 389,600 professional nurses in active practice in the nation. The demand for nursing services is so great, the present recruitment goal for the nation as a whole is 55,000 student nurses a year.

The number of hospital nurses, the largest single group, has increased by 15 per cent in the last four years to a total of 231,000. Private duty nurses, the next largest group, who are also at the bedside, number 74,000. The 35,200 nurses working in doctors' offices, 25,300 public health nurses, 14,000 industrial nurses, and the 8,200 nurse educators in schools of nursing make up the remainder of the total, along with 1,900 nurses in a variety of other fields.

The ratio of all nursing personnel, including student nurses in general hospitals, has risen from 69 per 100 patients to 74 per 100 patients since 1950—making it the highest in history.

"The steady rise in the nurse supply of the nation is significant to the total health picture," the Public Health Service pointed out, "Because nurses play such a vital part in all phases of our national health. For that very reason the nursing profession today offers a wide variety of excellent opportunities in the field of public health, in hospitals, schools, industry, doctors' offices, and, of course, in our schools of nursing."

MEDICAL NEWS IN TENNESSEE

University of Tennessee College of Medicine

Dr. C. Riley Houck of the Department of Physiology has been awarded \$3,495 by the

U. S. Public Health Service and \$7,980 by the American Heart Association for the continuation of studies on hypertension. Dr. D. B. Zilversmit, of the same department was awarded a research grant of \$4,000 by the Lipotropic Research Fund for the investigation of lipotropic agents in experimental liver disease and atherosclerosis.

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A \$5,005 research grant by the U. S. Office of Naval Research has been given to Dr. C. H. Eades, Jr., of the Department of Chemistry, to continue his studies of amino acid metabolism in the surgical patient.

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The following faculty appointments have been made. Dr. James Brown as instructor in the Division of Pharmacology; Dr. Yehia Aziz Habib of the University of Alexandria (Egypt), as visiting associate professor of clinical physiology.

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Thirteen Memphis Physicians have been appointed assistants on the staff of the University of Tennessee College of Medicine, as follows: Doctors H. B. Hasen, H. B. Maddux, and W. W. Watkins as assistants in the Department of Urological Surgery; Doctors J. M. Tuholski, S. B. Korones and R. B. Miller as assistants in the Division of Pediatrics; Doctors S. Siegal, P. E. Orpet, Jr., and R. L. Wooten as assistants in the Division of Medicine; Doctors R. J. Stubblefield, G. P. Schoettle and W. H. Gragg, Jr., as assistants in the Division of Surgery; and Doctor W. R. Mitchum as assistant in the Department of Radiology.

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A three-day Post-graduate Course in Obstetrics and Gynecology was given at the John Gaston Hospital, October 27-29 under the direction of Dr. Phil C. Schreier, chief of the Division of Obstetrics and Gynecology.

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For the seventh year the National Cancer Institute of the U. S. Public Health Service has awarded a grant of \$25,000.00 to improve the cancer teaching program at the undergraduate level.

Tennessee Valley Medical Assembly
The Second Annual Tennessee Valley

Medical Assembly was held in Chattanooga on September 27-28, with a registration of over 500 physicians from sixteen states.

Appearing on the program were the following essayists with the titles of the papers presented: Dr. S. F. Marshall, Boston, "Gall Bladder Diseases and Their Treatment"; Dr. Pricilla White, Tufts College Medical School, Boston, "Diabetes in Pregnancy"; Dr. John Adriani, Tulane University, New Orleans, "Anesthesia"; Dr. W. D. Paul, State University of Iowa College of Medicine, Iowa City, "Research in Antibiotics"; Dr. A. I. Dobson, Medical College of Virginia, Richmond, "Use and Abuse of Antibiotics in Infections of the Urinary Tract"; Dr. Frank Whitacre, Vanderbilt University School of Medicine, Nashville, "Management of the Breech Presentation"; Dr. Roy Hertz, National Cancer Institute, Bethesda, Md., "Endocrine Approaches to the Cancer Problem"; Dr. Emil Novak, University of Maryland School of Medicine, Baltimore, "Functioning Tumors of the Ovary"; Dr. A. C. DeGraff, New York University College of Medicine, New York City, "Use of Digitalis and the Cardiac Glycosides"; Dr. E. L. Compere, Northwestern University Medical School, Chicago, "The Prevention of Non-Union in the Treatment of Fractures"; Dr. Lester Dragstedt, University of Chicago Medical School, Chicago, "New Light on the Physiology of Gastric Secretion and the Ulcer Problem"; Dr. Gershom Thompson, Mayo Foundation, Rochester, Minn., "The Treatment of Cancer of the Urinary Bladder"; Dr. Julius Wilson, Henry Phipps Institute of the University of Pennsylvania, Philadelphia, "Present Day Treatment of Pulmonary Tuberculosis"; Dr. Gould Andrews, Oak Ridge, "Use of Radioactive Isotopes in Present Day Medicine"; Dr. V. C. Vaughn, III, Temple University School of Medicine, Philadelphia, "Problems in the Management of Newborn Infants"; Dr. H. E. Mock, Sr., Northwestern University Medical School, Chicago, "Skull Fractures." Dr. Walter Judd, Member of the U. S. House of Representatives from the Fifth Congressional District of Minnesota was the Banquet speaker. His subject was "The Doctor's Place in Public Affairs."

Morgan County Medical Center

The county-built Morgan County Medical Center was officially dedicated on October 17th at Wartburg. This project was one of the activities sponsored by the Tennessee Medical Foundation.

Tom Moore Chapter of General Practice

Physicians in thirteen counties surrounding Cookeville organized the Tom Moore Chapter of the Tennessee Academy of General Practice recently, and elected Dr. Thurman Shipley, Cookeville, as president. Dr. Perry Sloan, Jamestown, was named vice-president and Dr. O. Reed Hill, Lebanon, secretary and treasurer. The Chapter was named in honor of Dr. Tom Moore, for years a physician in Algood, Putnam County, and named by the state medical association in 1951 as its "general practitioner" of the year.

Hospital Program for the Indigent

Tennessee's 1955 legislature will be asked to appropriate \$1,600,000, to finance and expand for two years the state's hospital program for the indigent. Only 56 of the 95 counties have officially notified the State Health Department that they are ready to take part in the program. Dr. R. H. Hutcheson, State Health Commissioner has stated that there are probably ten to fifteen other counties which have taken the required action but have not so notified the state. Other counties are expected to provide for the necessary appropriations at their regular quarterly meetings of the county courts.

Nashville Medical Assembly

More than 400 doctors from Tennessee and Kentucky attended the Seventh Annual Nashville Medical Assembly at the Hermitage Hotel October 28th and 29th. A "medical reminiscences" tableau was the highlight of the Assembly banquet at the Club Plantation on the night of October 28th.

Subjects and speakers at the Assembly were: "X-Ray Clinical Pathological Conference," Dr. David G. Pugh, Mayo Clinic, Rochester, Minn.; "Curable Heart Disease," Dr. Lewis Dexter, Peter Bent Brigham Hospital, Boston, "Practical Consideration in the Correction of Abnormalities in Electro-

lyte Balance," Dr. Ann S. Minot, Vanderbilt University School of Medicine, Nashville. A panel discussion on "The Selection of Patients for Cardiac Surgery," was comprised of Dr. Lewis Dexter, moderator, Dr. Osler Abbott, Emory University School of Medicine, Atlanta, Dr. E. V. Newman, Vanderbilt University School of Medicine, Nashville; Dr. David G. Pugh, and Dr. Mildred Stahlman, of the Vanderbilt University School of Medicine.

On Friday, October 29, the program consisted of: "The Diagnosis of Cancer of the Lung," Dr. Osler Abbott; "Motion Pictures of Interesting Neurological Diseases," by Dr. B. E. Sproffkin of the Vanderbilt University School of Medicine; "Problems in Infertility" by Dr. R. B. Greenblatt, Medical College of Georgia, Augusta; a panel discussion on "Jaundice" by Dr. Harwell Wilson, University of Tennessee School of Medicine, Memphis, as moderator, Dr. Frank C. Womack, Nashville, Dr. James C. Overall, Nashville and Dr. Robert B. Wood, Knoxville, as participants. A clinical Pathological Conference was presented with the participants being Dr. David K. Gotwald, Nashville, Moderator, Dr. Osler Abbott, Dr. Robert B. Greenblatt and Dr. Robert B. Wood.

PERSONAL NEWS

CORRECTION

Appearing in this column of the October Journal was the item that DR. MOORE MOORE, JR. and DR. JAMES G. HUGHES, both of Memphis, had entered military service. THIS WAS INCORRECT. DR. MOORE and DR. HUGHES were only on an inspection tour as civilian consultants. They have returned to Memphis from their special assignments, and are actively engaged in their practice.

Dr. Robert E. Mabe has joined the staff of **Drs. Newell and Newell and Associates** for the practice of internal medicine in Chattanooga.

Drs. Moore J. Smith and **Wayne Gilley**, Chattanooga, recently discussed "Upper Gastro-Intestinal Tract—Peptic Ulcer" over a Chattanooga TV Station. The program was sponsored by the Chattanooga Health Council.

Dr. M. F. Nelson, Chattanooga, has been made a diplomate of the American Board of Internal Medicine.

Dr. Curtis P. McCammon and **Dr. William H. Piper** will head the staff of the new Morgan County Medical Center.

Dr. David Waterman, Knoxville, recently addressed the Sertoma Club of that city on "Cigaretts and Lung Cancer."

Dr. John W. Ellis has opened an office to practice medicine at the Dyer Clinic in Dyer, Tennessee.

Drs. W. Edison Smith, George Zirkle, William A. Nelson, and W. F. Gallivan, all of Knoxville, have been named as an advisory committee to the Knox County Chapter of the Muscular Dystrophy Associations of America.

The following doctors recently participated in the Health Forums in Kingsport: They are: **Drs. M. D. Massengill, A. K. Husband, Fred McConnell, L. C. Cox, Lyle Smith, H. Jim Brown, James S. Vermillion, Robert Jones, William Wiley, Allen Exum, William Harrison and Robert Christiansen. Dr. Fred McConnell and Dr. W. E. Scribner** were moderators of the two panels.

Dr. Paul Carter, Chattanooga, spoke at a Health Forum presented in Cleveland.

Dr. Howard B. Hasen, Memphis, announces the opening of his office for the practice of Urological Surgery.

Dr. Norman S. Olsen, Nashville, is taking a special course at the Oak Ridge Institute of Nuclear Studies.

Dr. E. H. Hearst, Bristol, will represent Washington County at the Third National Conference of the Muscular Dystrophy Association of America.

Drs. H. William Scott, Jr., Russell Ward, Laurence Grossman, Eugene Johnson, Thomas S. Weaver and James N. Thomasson, all of Nashville, recently participated in a Health Forum.

Dr. Dan Gray, Columbia, recently addressed the Columbia Civil Defense Training Group.

Appearing recently in a Public Health Forum at Dyersburg, were **Dr. Daniel A. Brody and Dr. Burt Friedman**, both of Memphis, and **Dr. Thomas W. Johnson and Dr. David Taylor** of Dyersburg.

Dr. Robert L. Thomas, Maryville, recently addressed the Kiwanis Club.

Drs. Talmadge Buchanan, Nat Copenhaver, Norman Patterson, Bruce Mongle, C. J. Harkrader, Jr., and Tom Kuhnert, all of Bristol, recently participated in a Health Forum in that city.

Drs. Thomas B. Haltom, William F. Orr, Thomas B. Zeffoss, Jr., and Edwin L. Williams, of Nashville, have participated in one of Nashville's Health Forums.

Dr. Elbert L. Young, Humboldt, has opened an office for the practice of medicine, and is connected with **Dr. L. R. Sloan** and **Dr. H. E. Green**.

Dr. Carl E. Adams has been granted permission by the zoning Committee to construct a hospital in Murfreesboro.

Dr. Malcolm T. Tipton, Union City, has been re-appointed as a member of the Tennessee Public Health Council by the Governor. Other members are **Dr. R. N. Buchanan, Jr.**, Nashville; and **Dr. R. C. Kimbrough** of Madisonville.

Dr. David H. Turner has opened an office for general practice of medicine at Jasper.

Dr. Lee Powers Pearce, Collierville, was recently honored for fifty years in the practice of medicine by the University of Tennessee College of Medicine.

Dr. John Yarborough, Maryville, addressed the Maryville Optimist Club.

Dr. Merrill F. Nelson, Chattanooga, recently addressed the District Seven Nurses' Association. Six Midstate Physicians attended the Second World Congress of Cardiology in Washington. They were: **Drs. Elliott V. Newman, Crawford Adams, Milton Grossman, George Meneely, Janet M. Lemley-Stone and B. F. Byrd.**

Dr. Bernard J. Pass of Nashville, has passed the Board Examination in Dermatology and Syphilology.

Arthritis and Rheumatism Foundation, 23 West 45th Street, New York 36, N. Y.

Cavalcade of America

"The Doctor" will be televised on December 7 at 7:30 E. S. T. over 75 stations of the American Broadcasting Company network. (E. I. duPont de Nemours' Co.)

Cincinnati Sanitarium Opens New Electroshock Therapy Building

A new building for the exclusive use of ambulatory out-patient electroshock therapy, known as the Harry Peers Collins Memorial Pavilion, was erected as a memorial to the president and guiding hand of the Sanitarium for 45 years. The new building includes treatment rooms, consultation room, reception room, and a new occupational therapy department and a large, well-equipped recreation area. It was designed to minimize apprehension of patients awaiting treatment. Mobile electroshock equipment can be rolled up to the patient's door and remain out of sight.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Office of the Secretary—

Robert L. Faulkner, M.D.
2105 Adelbert Road
Cleveland 6, Ohio

The next scheduled examination (Part 1) written examination and review of case histories, for all candidates will be held in various cities of the United States, Canada, and military centers outside the continental United States, on Friday, February 4, 1955.

FLORIDA MIDWINTER SEMINAR IN OPHTHALMOLOGY AND OTOLARYNGOLOGY

The ninth annual University of Florida Midwinter Seminar in Ophthalmology and Otolaryngology will be held at the Sans Souci Hotel in Miami Beach the week of January 18th, 1955. The lectures on Ophthalmology will be presented on January 17th, 18th, and 19th; and those on Otolaryngology on January 20th, 21st, and 22nd. A midweek feature will be the Midwinter Convention of the Florida Society of Ophthalmology and Otolaryngology on Wednesday afternoon, January 19th—to which all registrants are invited. The registrants and their wives may also attend the informal banquet at 8:00 P. M. on Wednesday. The Seminar schedule permits ample time for recreation.

SEVENTH ANNUAL CONVENTION—INTERNATIONAL ACADEMY OF PROCTOLOGY

The Seventh Annual Convention of the International Academy of Proctology will be held at

BOOK REVIEW

Peripheral Circulation in Man. Edited by G. E. W. Wolstenholme and J. S. Freeman, Boston. Little, Brown & Co., 1954.

In England in May of 1953, under the auspices of the Ciba foundation, there was held a symposium on the general subject of the peripheral circulation. Participants were thirty-two eminent authorities from several countries including clinicians, physicists, physiologists, and representatives of several other disciplines. This book is a collection of the papers that were presented and includes the discussion following each of them.

As stated in the preface, "the book covers the methods for studying blood flow, the changes in circulation due to exposure to cold or heat, the actions of adrenaline and noradrenaline on blood flow, the neurohistology and reflex control of the circulation and the effects of sympathectomy, the significance of cold agglutinins, and the influence of visceral activity on the peripheral circulation".

The physician particularly interested in peripheral vascular disease and well grounded in research methods and basic sciences will undoubtedly find this stimulating reading. Its appeal and usefulness to others, though, will be very limited.

T. M. B.

ANNOUNCEMENTS

Bulletin on Rheumatic Diseases

The first four volumes of the Bulletin have been bound and are available for \$1.00. Address

The Plaza Hotel, New York City, March 23 to 26, 1955. There will be special emphasis on anorectal presentations and on panel discussions. Plans are being developed for wet clinics and lectures at the Jersey City Medical Center under the direction of Dr. Earl Halligan, surgeon-in-chief of the Medical Center. All physicians and their wives are cordially invited to attend the annual conventions of the International Academy of Proctology, whether or not they are affiliated with the Academy. There is no fee for attendance at these teaching sessions of the Academy. The Women's

Auxiliary has planned a very unusual program for the wives of the members and their guests.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION

The next examinations for the American Board of Physical Medicine and Rehabilitation will be held in Philadelphia, June 5 and 6, 1955. The final date for filing applications is March 1, 1955. Applications for eligibility to the examinations should be mailed to the Secretary, Dr. Earl C. Elkins, 30 N. Michigan Avenue, Chicago 2, Illinois.

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Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 47

DECEMBER, 1954

Number 12

As occurs not infrequently in medicine, a re-evaluation of "progress" may show that all does not necessarily end happily. The author raises a question of great importance in the management of otitis media in the infant.

MODERN CONCEPTS IN THE MANAGEMENT OF OTITIS MEDIA IN INFANTS AND CHILDREN*

WALTON W. HARRISON, M.D.,[†] Jackson Tenn.

I am quite sure that many of you, after seeing the title of this paper in the program observed, 'What new-fangled ideas could anyone have about a condition as old as ear infection?' The truth of the matter is that there is really nothing new; the title could just as well have read "Old-Fashioned Concepts in the Management of Otitis Media." The trouble is that we have forgotten some of the "old-fashioned" concepts in our enthusiasm for the miraculous results of the antibiotics. Some of you may say 'Why talk about that? Everybody knows how to treat ear infections.' Most of the older men who practiced medicine before the antibiotic era do know how and are doing a good job. But some of us younger doctors just didn't learn how, we were not really taught how to handle the whole problem. As a consequence, we have been prone to treat ear infections lightly oftentimes prescribing an antibiotic without adequate follow-up examinations.

Perhaps the criticism, by some of the otologists, that the improper treatment of ear infections by some practitioners and pediatricians is resulting in more conduction deafness than ever before is justified. Certainly school surveys are showing that the incidence of deafness in school children is higher than before the miracle age of antibiotics,¹ when by all odds it should be less.

The erroneous idea is prevalent that anti-

biotic therapy has rendered old-fashioned "drum-lancing" obsolete in almost all cases. As a matter of fact, as a medical student, intern and resident, I never observed a myringotomy performed in an Out-Patient Service and less than a half-dozen performed on hospitalized cases. The textbooks and the E.N.T. professors described the indications and the technic but we saw the ear infection presumably recover with antibiotic therapy alone. At one hospital where I received training, the need for a myringotomy was an indication of hospitalization. As a result of such observations, we assumed that antibiotic treatment alone was all that was necessary to cure most ear infections. We hardly made the distinction between purulent and non-purulent infections,—it did not seem necessary. Of course, we were aware that there was pus behind some of the drums and that some appeared to clear slowly, but if the medication was continued long enough all of them seemed to get well. Actually, we merely had sufficient follow-up on an individual patient to observe what eventually happened.

I was ill-prepared, then, for handling the problems of purulent otitis media and recurrent otitis media encountered in private practice. Actually, at first, there were no problems. Most of the infections continued to clear with antibiotic treatment. Occasionally one failed to clear after several days and I referred it to an E.N.T. specialist. The antibiotic was usually changed or others were added, and the infection eventually subsided. Some flared up two or

*Read before the Meeting of the Tennessee State Medical Association, April 20, 1954, Nashville, Tenn.

[†]From the Jackson Clinic, Jackson, Tenn.

three times but, if the treatment was repeated, they recovered. Of course, some of the ear drums remained thickened, dull and retracted and some of the children could not hear well for awhile; but they were free of fever, their earache had subsided, and the infection was gone. For about two years after I began private practice, I did not lay my hand on a myringotomy knife!

But I worried about some of these cases. A few with bulging drums ruptured and drained spontaneously. These seemed to recover more quickly and the ear drums looked better afterward,—they were more translucent, the reflex cone of light was more nearly normal, they were not retracted and the child could hear better. I began to read about conduction deafness as a result of incompletely resolved purulent otitis media and something new (to me) called otitis media with effusion, serous otitis media and secretory otitis media. The evidence of increased deafness shown by school surveys was being reported. I realized that I had been curing infections, preventing complications such as mastoiditis, meningitis and lateral sinus thrombosis but how much actual benefit was the child receiving by having his infection cleared and being left a hearing cripple!

My associate was having the same problems and together we began to perform an occasional myringotomy on some of the worst looking ears and on those which failed to improve rapidly on antibiotic medication. We found that those we opened cleared more rapidly and that the drum resumed its normal translucency and shine in almost every instance. As we developed more experience, we learned that we could usually distinguish between the purulent and the non-purulent otitis on the first examination in even the very young infants. If there was doubt, the distinction became easier by re-examination after two or three days of antibiotic treatment. After establishing this policy, we performed myringotomies on 334 cases in the next twelve months as compared to none in the previous two years.

In talking with practitioners, pediatricians, and E.N.T. specialists in our own area and in other sections of the country, we

found few who were having our experience with ears or who were performing myringotomies with anything like this frequency. Now, I do not believe that the middle ears of the children in Jackson, Tennessee, are accumulating more pus and fluid than the ears of children elsewhere and yet I know that we are not performing myringotomies unnecessarily. Of course, we are still seeing catarrhal or non-purulent otitis media but I want to emphasize that we have in the past been seeing more purulent and serous otitis than we have been recognizing and treating properly.

I have been speaking as though this business of "lancing ears" has been our own little discovery. As far as we ourselves are concerned, it has been. I have presented this review of my own experience to demonstrate how, through a certain amount of bungling, I came to the realization of one of the oldest surgical principles,—the adequate drainage of collections of pus.

The introduction and use of antibacterial agents has dramatically reduced the immediate complications of acute otitis media. I have not seen a case of acute mastoid infection for three years, nor lateral sinus thrombosis or meningitis secondary to ear infection for a much longer interval. However, these agents have not been an unmixed blessing since their use seems to have actually increased the incidence of conduction deafness. Their promiscuous use in upper respiratory infections in many instances camouflages completely an incipient middle ear infection.

Upper respiratory infections with even the faintest evidence of middle ear infections should have a follow-up examination to determine whether there is a collection of fluid in the middle ear. If such collections are not adequately drained, it becomes gelatinous and eventually forms fibrous adhesions over the ossicles, thickening of the tympanic membrane and, perhaps, stricture or stenosis of the eustachian tubes. It is much safer to incise the drum when in doubt than to leave secretions in a middle ear. If no secretions are present, continued antibiotic therapy will allow prompt healing. On many occasions, I have performed a myringotomy when I was convinced fluid

or pus was present only to obtain no drainage. However, on peering through the incision gelatinous material could be seen in the middle ear, too thick to flow through. The use of a pneumatic type otoscope, under direct vision, with gentle positive and negative pressure with the bulb will usually draw the fluid through an adequate opening. If this procedure does not remove the material, the patient should be referred immediately to an otologist for further attempts at removal by aspiration, perhaps combined with eustachian catheterization.² If this type of infection be repeated once or twice without drainage, permanent deafness of considerable degree may result. We may, through neglect, produce a hearing cripple for life.

We have seen many presumably well babies, completely asymptomatic in so far as the ears were concerned, with ear drums bulging from serous fluids or pus within the middle ear. Most of these babies have a history of a mild upper respiratory infection which recovered spontaneously within recent weeks, although many of them do not. The fluid obtained by incising the drum may be sterile and contain few or many polymorphonuclear leukocytes or it may contain scattered organisms, usually gram-positive cocci. Adequate drainage with antibiotic treatment continued for one to two weeks allows the drum to resume its normal appearance. I cannot emphasize too strongly the adequate examinations, on practically every visit, of the ear drum of every infant and child who may come under your care for any reason whatsoever. It is more frequently rewarding than doing a rectal examination on an adult of the age of liability to cancer. A baby's ear is a small thing frequently overlooked because of the difficulty in visualization of the drum through a tiny canal often filled with wax. Five minutes or so spent in the arduous task of fully removing the wax from the canal of a screaming, squirming infant in for a well-baby "check-up" or immunization "shot" may be extremely rewarding in providing you with the opportunity of preventing a lifetime hearing cripple.

For the majority of purulent ear infec-

tions in infants and younger children, we have found penicillin perhaps combined with a sulfonamide to be the most effective medication. Orally administered Erythromycin or the other broad spectrum antibiotics may be as successful in many instances, but the difficulty of administration to smaller children and the high incidence of side reactions, particularly vomiting and diarrhea, makes their effectiveness less consistent. Of course, as with any infection, the etiologic organism may prove resistant and another antibiotic or antibiotic combination must be selected. Our present practice is to make a Gram stain on the fluid obtained from the ear; if Gram-positive cocci are present, treatment with penicillin by injection and a sulfonamide is instituted. If the ear has not become dry in four or five days, a culture is taken and sensitivity studies are performed to determine the antibiotic of choice. Should a Gram-negative bacillus be found initially, a culture and sensitivity study is obtained immediately, meanwhile beginning treatment with a broad spectrum antibiotic, streptomycin or a sulfonamide in some combination. In our series of purulent otitis media seen in 1953 Gram-positive cocci were found in 328 cases and Gram-negative bacilli in six.

Most of the resistant infections have been caused by *Staphylococcus aureus*, *pyocyanus*, *proteus* and coliform bacilli.

Adequate treatment to completely clear infection requires administration of medication for a minimum of a week to ten days and often times two weeks. We generally stop the penicillin injections after four or five days if drainage has ceased and the drum is healing and continue the sulfonamide for the remainder of the period. Follow-up examinations until the drum has resumed its normal appearance should be strongly emphasized. If the older child has had repeated infections or if the ear drum continues to appear abnormal, he should have his hearing tested with an audiometer.

For catarrhal otitis, the use of antibiotics is often unnecessary, especially in the older child. The use of glycerine or one of the other available ear drops and, perhaps, nose drops may be adequate treatment. In the infant and small child where eustachian

tube blockage associated with a upper respiratory infection is common, this is usually inadequate and the catarrhal infection may proceed to a purulent one without adequate antibacterial medication.

Infants and young children are more susceptible to ear infections for several reasons. (1) They have a lower general resistance to infection. (2) There is greater frequency of colds, infections of tonsils, adenoids and sinuses. (3) The larger relative size of the adenoids results in eustachian blockage. (4) Enlargements of the retropharyngeal lymph nodes adjacent to the eustachian tubes may impinge on their lumens.¹ According to Eagle, 99 per cent of middle ear infections are due to hypertrophy or infection of lymphoid tissues.¹ (5) Anatomically the eustachian tube is shorter, has a smaller nasal opening and is more horizontal than in the adult. (6) The incidence of nasal allergy is higher in children; probably half of our cases occur in infants and children with a constantly boggy, pale to purplish allergic nasal mucosa and a history of repeated colds or chronic sniffles. In addition to the eustachian obstruction from the edematous membrane, these children tend to have larger adenoids also. (7) Structural abnormalities of the nose and throat such as repaired cleft palate or a deviated nasal septum may obstruct the eustachian orifice.

Otitis media with effusion, without associated middle ear infection (often called secretory or serous otitis) is usually associated with upper respiratory infection and some degree of eustachian obstruction. In the older child or adult, there is usually the typical history of a rather sudden onset of tinnitus and deafness with little or no pain following a upper respiratory infection. Inspection of the drum will always show some dullness and thickening of the drum with loss of normal translucency; it is usually not bulging, more often retracted, a fluid level, meniscus or air bubbles which migrate under observation may be seen. Failure to adequately drain this fluid may result in the same consequences as failure to remove the fluid of an aborted middle ear infection.

In case of recurrent infection or serous

effusion, the cause of eustachian obstruction must be sought out and removed. Many physicians observe the rule of thumb that if a child has three such episodes within a twelve month period, the adenoids should be removed. If the condition recurs after the adenoidectomy it is our practice to use deep X-ray therapy to obtain reduction of the lymphoid tissue of the nasopharynx and retropharyngeal lymph nodes which may be harboring infection or obstructing the eustachian tubes. There may be some who would criticize the use of deep X-ray in a growing child on the theoretical basis that we are interfering with growth of the bony structures or that the radiation may be carcinogenic. I feel that most of these critics have not been faced with the problem. I know of no studies or reports on the results of irradiation of the nasopharynx which would justify their criticism. The small total dose of X-ray necessary to shrink the nasopharyngeal lymphoid tissue is little more than a skin-erythema dose; administered through several portals it is considered to be completely safe. On the other hand, the use of locally applied radium at the eustachian opening subjects a small segment of tissue to large doses of irradiation and yet may not relieve the obstruction. For long standing swelling, with perhaps fibrous adhesion of the middle ear, in those who fail to respond to other management, X-ray therapy directed toward the middle ear is advised by some otologists.⁵

Occasionally regrowth of adenoid tissue at a later time is sufficient to require repeated surgical removal. This is not without some hazard, however, because of the risk of producing sufficient scarring to obstruct the eustachian orifice.

The child with nasal allergy must be subjected to enthusiastic allergic "work-up" and control and the liberal administration of antihistaminics. It is in this type of patient that recurrent middle ear infection, in spite of all attempts at control, is most disappointing. All that one can do is to treat the recurrent infections as they arise, performing myringotomies repeatedly as indicated so that permanent deafness may be prevented. Fortunately, they tend to "outgrow" the tendency as the nasopha-

ryngeal structures and eustachian tube enlarge and elongate with growth and more general resistance is built up. Most of them have usually subsided by four years of age. In this connection, I might mention the use of prophylactic sulfonamides and antibiotics with colds and upper respiratory infections in an attempt to prevent recurrent otitis. We have given this practice extensive trial and have found it of little or no benefit. More often, it covers up symptoms of middle ear infections which proceed to an effusion or else a frank purulent infection flares up after the prophylactic medication is discontinued.

A few comments of practical interest may be in order. Regarding the technic of myringotomy itself, an adequate incision with a wide semicircular sweep across the inferior portion of the drum is essential. A stab myringotomy is useless except occasionally for diagnosis and will seal over before adequate drainage has occurred. There are some who advocate an incision in the anterior inferior quadrant across the reflex cone of light because this is the most inferior portion of the middle ear and allows optimal drainage.⁶

The procedure is actually associated with very little pain, particularly if some of the acute inflammation has subsided after a day or so of treatment. However, an acute purulent otitis with a markedly bulging drum is a surgical emergency and no delay in incising it should be countenanced. The danger in such a situation of permanent derangement of the middle ear ossicles or of spontaneous rupture in the attic with the production of a chronically draining ear or cholesteatoma are real hazards.

The idea that "lancing the drum" will result in deafness is widespread in the public mind and we frequently encounter objection to the procedure on the part of the parents. However, we find that, with proper explanation of the situation and the need for the procedure, it is readily accepted. We make a practice of using the large cross-section drawing of the ear published by the Doho Chemical Company (the Aur-algan people) in interpreting the problem to the parents.

There are many aspects of the middle ear

problem on which we have not touched. The treatment of chronic otitis media, tuberculous otitis and certain complications of otitis media are properly within the sphere of the otologist. By the proper management of acute otitis, the incidence of complicating chronic infection and conduction deafness should be markedly reduced. The dictum that "the cause of chronic ear infection is neglect" is more true today than it was 15 years ago. The clinician is responsible not only for the restoration to health of an acutely ill child but also for the preservation of function of the hearing mechanism. In the words of Zondermann, "*A deafened ear, even though bacteriologically cured, represents a therapeutic failure.*"⁷

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Discussion

J. C. OVERALL, M.D. (Nashville): Before discussing this paper I want to congratulate Dr. Harrison, not only on his excellent presentation but also on the clinical type of research he has done. It takes a man that is really a diligent worker, as well as one dedicated to the profession to carry on in this important field of clinical medicine.

Now as to the contents of his paper one would have to say that there are two viewpoints. Dr. Harrison presented one viewpoint of early myringotomy. Recently I had the privilege of taking part in another bit of clinical research, also done by a former Vanderbilt trained pediatrician, who was upholding the premise that myringotomy in most cases is an unnecessary procedure. It would be very interesting to get these two men, Dr. George Heller and Dr. Harrison, together for a friendly debate. I, myself, feel that it is largely up to the clinical judgment of the pediatrician, otologist or general practitioner to decide whether it is necessary that the ear drum be opened. There are certainly some cases where by opening the ear,

recovery is more rapid and complete. However, the antibiotics (especially penicillin and sulfonamides) have undoubtedly changed the picture as regards otitis media. Dr. Heller, in a statistical study from 1932 to 1940 (in which I was also privileged to participate) showed in a series of 588 cases that 199 or 33.8 per cent had their ears lanced and slightly over 50 per cent recovered uneventfully with only symptomatic treatment,—and this was before the day of sulfonamides. In his series there were 16 cases of mastoiditis requiring operation. All of these were in cases where myringotomy had been done.

It has been my habit since first starting practice to carry Vinethene or some other smaller anes-

thetic in my bag for use in opening ears in the home, and I still carry this. However, this is not used nearly so often as formerly.

A good answer to this problem could be obtained by means of a clinical research project and dividing a series of cases of otitis into three or four groups as: (1) no treatment except symptomatic; (2) immediate lancing of those ears meeting the criteria—without giving antibiotics; (3) immediate lancing plus antibiotics; (4) antibiotics alone.

I once again want to congratulate Dr. Harrison for his presentation and feel that all of us should make a more determined effort to do similar clinical research.

An Approach to the Prediction of Diabetes Mellitus by Modification of the Glucose Tolerance Test with Cortisone. Stefan S. Fajans, M.D., and Jerome W. Conn, M.D. *Diabetes* 3: 1954.

This interesting study was undertaken by the authors to determine whether the potentiality of the development of diabetes could be uncovered in presently non-diabetic relatives of diabetic patients. Glucose tolerance tests were done on 152 ambulant, healthy relatives of diabetic patients and on 50 normal control subjects who had no known family history of diabetes. All subjects consumed a standard diet prior to each test and "the true blood sugar" was measured. Unsuspected diabetes was found in at least 19 per cent of 152 relatives of diabetic patients, and only one of 50 control subjects demonstrated a diabetic glucose tolerance test.

Studies on the non-diabetic relatives of diabetics comprised the major effort of this investigation. Glucose tolerance tests were repeated in 130 individuals (37 controls, 75 non-diabetic relatives of diabetics, and 18 diabetics) after oral administration of 100 or 125 mg. of cortisone during an 8½ hour period immediately preceding the second test. Twenty-four per cent of the non-diabetic relatives of diabetics showed marked loss of glucose tolerance during the cortisone-

glucose tolerance test. Only one of the 37 controls a similar loss of carbohydrate tolerance.

Ten of 12 known diabetic patients showed further significant loss of carbohydrate tolerance during the cortisone-glucose tolerance test.

Six obese diabetics consumed submaintenance diets until they had lost from 15 to 30 pounds of body weight. After reduction of body weight they all exhibited normal carbohydrate tolerance by the standard test. However, with the cortisone-glucose tolerance test they still showed significant loss of carbohydrate tolerance.

Thus, it was possible by means of this test to separate into two distinct groups the presently non-diabetic relatives of diabetic patients. Those who exhibited a positive response to the test reacted as known diabetics do. The others showed a response considered non-diabetic similar to that seen in 97 per cent of the control group who had no known family history of diabetes.

Of course, it is important to recognize this work as an initial study which must be confirmed by long term follow-up of these patients who at present by our standard methods of testing are non-diabetic yet with the cortisone-glucose tolerance test appear to be headed for the diagnosis of diabetes mellitus in the future. (Abstracted for the Tennessee Diabetes Association by Addison B. Scoville, Jr., M.D., Nashville.)

The skin may be but the mirror reflecting the pathologic changes which in the viscera or musculo-skeletal structures give rise to the symptoms of internal disease.

CUTANEOUS MANIFESTATION OF INTERNAL DISEASE*

BERNARD J. PASS, M.D., Nashville, Tenn.

It is constantly becoming more evident that a specialist in any field must have a good background in general medicine and that no part of the human body can be segregated and thought of as being separate and apart. Many cutaneous diseases involve the skin without any apparent abnormalities of other organs. Pemphigus is an example of a generalized and usually fatal disease in which attempts to find internal disease has been fruitless. However, it is becoming more apparent that many cutaneous diseases are expressions of internal diseases and that the skin is only one of the many organs involved. The skin, as any other organ, may be subjected to infections, stresses produced by derangements of metabolism, endocrine disturbances, and by stresses mediated through the nervous system in which the skin partakes in the general reaction.

The modern, well trained dermatologist, after three years of training in an accredited institution with intimate contact with the other branches of medicine, learns that he is not only a morphologist but that he is primarily an internist with special knowledge of diseases of the skin. Dermatology has expanded considerably from being simply a specialty concerned with superficial classification, as it once was. This is shown by the number of research articles appearing in special journals like the *Journal of Investigative Dermatology* on basic physiology and biochemistry. Another reminder is the number of dermatological papers in the medical journals devoted to internal medicine. These facts point to the growing awareness of the proper evaluation and interpretation of cutaneous manifestations in relation to internal disease.

Lipoidosis

The lipoidoses, an important group of

conditions having characteristic cutaneous manifestations, are associated with increases of cholesterol and lipoids in the blood serum and in the tissues indicating altered metabolic and endocrine activity. The xanthoma or primary lesion is a nodule or a tumor, consisting of foam cells, usually yellowish and waxy in color.

The *hereditary xanthomas* are the most important group because of the prognostic implications. The serum cholesterol and lipoids are usually moderately to greatly elevated and are associated frequently with angina, coronary disease and other cardiovascular disturbances. In *xanthelasma* there are single or several elongated soft flat light yellow plaques on the inner canthus of the upper and lower lids. Diabetes and angina pectoris are found in a fairly high percentage of cases.

In *xanthoma tuberosum multiplex*, xanthomas are typically localized on the extensor surfaces of the elbows, knees and heels. The palms and soles are involved, especially in adults, who have evidence of hepatic disease or diabetes. Cholesterol and total lipoids may be increased two to four times and cardiovascular disturbances are common.

Xanthoma diabeticorum is essentially xanthoma tuberosum, in patients who usually have severe diabetes and a marked hyperlipemia. It is characterized by small yellow to brown papules, nodules and plaques, predominating on the extensor surfaces and on the palms and soles.

Necrobiosis lipidica diabeticorum is frequently associated with diabetes. The lesions are usually confined to the anterior tibial regions and appear as well defined plaques which are round, oval or irregular with a yellowish center and a violaceous periphery. Later the center becomes depressed and atrophic.

Xanthomas may appear in *myxedema*, presently thought to be due to the elevated

*Read before Middle Tennessee Medical Association, Nov. 18, 1954, Gallatin, Tenn.

serum cholesterol. The xanthomas may disappear with control of the hypothyroidism.

In *biliary cirrhosis* resulting from pericholangitis and fibrosis, jaundice followed by xanthomas often appears. There also may be petechiae, hemorrhages, spider nevi and severe pruritis. During obstruction of the common bile duct, xanthomas may appear which clear up with release of the obstruction.

The diseases that are now classified as the eosinophilic granuloma group were formerly called the reticulo-endothelial diseases and they include Letterer-Siwe, Hand-Schuller-Christian, Nieman-Pick and Gaucher's diseases.

In *Letterer-Siwe's disease* xanthomas do not appear but petechial exanthemata and purpura do.

Hand-Schuller-Christian disease is a syndrome ordinarily seen in children and characterized by rarefaction of the bones of the skull, diabetes insipidus, exophthalmas, adiposogenital dystrophy and other abnormalities of growth.

Nieman-Pick's disease occurs primarily in children. The skin is yellowish, xanthomas are infrequent and splenohepatomegaly is common. The disease is progressive and fatal.

Gaucher's disease is familial, occurring most frequently in Jewish individuals and at any age. There is enlargement of the spleen and liver, mottling, rarefaction and cortical thickening of the long bones. The skin has a bronze color, xanthomas are not present and there may be scattered hemorrhages.

Lymphomas

The lymphoblastoma comprises a group of diseases in which the symptoms are often first visible in the skin. The onset of these malignant and fatal conditions may be with severe, intractable itching. This is particularly true of *Hodgkin's disease*, in which pruritis may precede lymphadenopathy by as long as two years. Other skin manifestations may be tumors and ulceration, prurigo, papules, vesicles, urticaria, scarletiform and rubeoliform eruptions. Recurrent herpes zoster should arouse suspicion of the diagnosis.

The *leukemias* present specific lesions in which the histology reveals the diagnosis, and non-specific lesions not having a diagnostic histological picture and called leukemia. Myelogenous leukemia infrequently presents lesions with a specific infiltrate. Nodules and tumors of varying sizes are the common specific eruptions. Purpura, chronic urticaria, papules, erythema multiforme and bullous eruptions have been recorded among the non-specific lesions.

Lymphosarcoma presents disseminated metastatic tumors of the skin. Of interest is their tendency to spontaneous remission and the rapid response to X-ray therapy.

Mycosis fungoides usually begins in adults and may only present pruritis for years. However, an eczematous stage sooner or later supervenes, the skin eventually becomes infiltrated, finally to be followed by the production of tumors. Pulmonary complications have been observed in mycosis fungoides.

Generalized exfoliative dermatitis occurs in all the lymphoblastomas, and should make the physician search carefully for the diagnosis.

Collagen Diseases

The collagen diseases, lupus erythematosus, scleroderma, dermatomyositis and periarteritis nodosa, are grouped together, although most observers now feel that they do not have a common origin. *Chronic discoid lupus erythematosus* is characterized by patches and plaques on the face and scalp, having firm, irregular borders, with comedones and light adherent scales. The center is often depressed and close examination will reveal dilated follicular orifices. The butterfly distribution about which so much has been written is usually absent. In *acute disseminated lupus erythematosus*, erythema, erythema multiforme, purpura, bullae, vesicles and scaling patches may be present. These patients have an elevated temperature, malaise, elevated sedimentation rate, leucopenia, and anemia, and involvement of the heart and kidneys. The L. E. cell is found only in the acute type of lupus erythematosus and usually disappears in the chronic and subacute and acute stages. The numerous reports in the liter-

ature of the chronic discoid type developing into the subacute and acute types lead to the consideration that all phases of lupus erythematosus are one disease.

Scleroderma may be localized and generalized. Circumscribed scleroderma, known as morphea, shows one or several well defined, firm, smooth patches, lines or bands, surrounded by a violaceous halo which may involute spontaneously with atrophy. A solitary linear lesion on the scalp resembling a saber cut is known as "en coup de sabre." Generalized scleroderma may involve the entire body. The skin feels tense and hard, rigidity increases and the subcutaneous tissues become firmly bound to the underlying structures. Acrosclerosis combines Raynaud's phenomena with secondary scleroderma of the distal parts of the extremities, face and neck, and chiefly affects women. Internal symptoms in scleroderma include arthralgia, dysphagia, interstitial myositis, involvement of the heart and esophagus and fibrous and cystic changes of the lungs.

Cutaneous lesions in *dermatomyositis* may vary from mild erythema to urticaria multiforme. Dysphagia, hoarseness, dyspnea and cardiac involvement occur frequently. The patient becomes weak, often unable to lift himself from the bed and complains of tenderness in the muscles.

Periarteritis nodosa is a systemic disease involving the arterioles, the small arteries and often the veins. It may follow an acute infection and in some cases has been considered to be a drug sensitization. The most characteristic element is the nodule which appears in crops along the course of a superficial artery. It is usually painful, becomes pustular, necrotic and ulcerates. Systemic symptoms are protean depending on the site of vascular damage. There may be fever, tachycardia, weakness and pain in various regions. Eosinophilia is usually present.

Blood Dyscrasias

Many of the disorders involving the blood and blood forming organs have cutaneous manifestations. *Sickle cell anemia*, a hereditary anemia, may show single or multiple, unilateral or bilateral chronic, painful

ulcers near the ankles. Negroes are almost exclusively affected. Similar ulcers may be seen in *hemolytic anemia*. *Plummer-Vinson syndrome* is a condition which presents idiopathic hypochromic anemia, achlorhydria, splenomegaly, glossitis, cheilitis, perleche and spoon-nails. *Polycythemia vera* is characterized by redness of the skin, especially of the face and hands, rosacea, purpura annularis telangiectodes and acne urticata. The oral mucosa is a deep red. The tongue may be swollen and bleeding from the enlarged gums often occurs.

Mycoses

The deep mycoses are being diagnosed more frequently because there is an increasing awareness of the cutaneous and systemic aspects of the disease. The central nervous system may be involved in cryptococcosis, blastomycosis and coccidiomycosis. As spread to the bones occurs with blastomycosis, coccidiomycosis, cryptococcosis and actinomycosis. Gastrointestinal infection is seen with South American blastomycosis. Histoplasmosis causes mucous membrane involvement. Lymphadenopathy is associated with South American blastomycosis, coccidiomycosis and histoplasmosis. There have been reports that lymphosarcoma has been found in patients with cryptococcosis and histoplasmosis. The lungs are affected in many of the deep mycoses while in coccidiomycosis the pulmonary form is the usual one. Cutaneous manifestations appear usually as nodules and granulomatous lesions which are indolent and eventuate ordinarily into ulcers.

Drug Eruptions

Drugs produce cutaneous symptoms in many ways,—idiosyncrasies, changes in the ecological flora, allergic sensitization and intoxication.

Examples of allergic sensitization are eruptions caused by antibiotics and the sulfonamides. With the widespread use of penicillin reactions are becoming commonplace. Urticaria, angioneurotic edema, serum sickness syndrome, erythema-vesicular dermatitis and erythema nodosum are reported as complications. Erythroderma-like eruptions due to cross sensitivity

with the antigen in the superficial fungi have been recorded due to penicillin. Sulfonamides have caused morbilliform, scarletiform, purpuric, varioliform, urticarial, papular, vesicular, bullous and nodular eruptions. Aureomycin and Terramycin, while they do not as commonly cause reactions, may produce any of the lesions described.

Bromides and iodides are examples of intoxication and are characterized by acneiform, pusular and fungoid lesions which proceed to ulceration. Barbiturates produce generalized exanthematous or local fixed eruptions. Arsenical eruptions may be extremely variable. Herpes zoster, lichen planus like lesions, purpura, scarletiform, hyperkeratoses, palmer and planter keratoderma and generalized exfoliative dermatitis have all been seen with arsenic.

Carcinoma

Carcinoma metastasizes to the skin and also produces non-specific eruptions. Metastases from carcinoma of the breast, for example, reach the skin by direct extension and by the lymphatics. The contiguous metastases are painless nodules which may coalesce as the so-called "carcinoma en cuirasse" or as an inflammatory, red area known as "erysipelas carcinomatosus." Skin metastases from visceral cancers are rare.

Melanosarcoma and lymphosarcoma both metastasize to the skin, forming cutaneous and subcutaneous nodules and plaques, in some cases in enormous numbers.

Acanthosis Nigricans

This is a dermatosis affecting the axillas, the nape of the neck, external genitals, groins, face, inner aspect of the thighs, flexor surfaces of the elbows and knees, the umbilical region, hypogastrium, forearms, perineum and the eyelids. The skin is dark brown to black in color. The pigmented areas are covered with discrete or fused nodules, papillomatous growths or vegetating masses. In the axillas and other skin folds, diffuse, warty, verrucous growths are especially marked and prominent features. It has been customary to divide acanthosis nigricans into the juvenile or benign type and the adult or malignant type. This sharp division is, however, arbitrary. When carcinoma is present it is most likely found in the stomach, breast, lungs or bronchi. Recently a third type of acanthosis nigricans has been described occurring in obese individuals which disappears with loss of weight.

Summary

The present day dermatologist looks at the patient as an individual whose cutaneous symptoms frequently reflects internal metabolic and endocrinological, as well as physiological derangements. Because of long training in the diagnosis of cutaneous disease he is able, without long drawn out laboratory procedures, to properly evaluate these diseases in relation to other organs. Some of these relationships have been presented.

STAFF CONFERENCE

City of Memphis Hospitals*

1. Gun-shot Wound in Abdomen
2. Aneurysm: Excision and Grafting of Abdominal Aorta

DR. HARWELL WILSON: Gentlemen, Dr. Chappell will present this case for discussion.

DR. F. W. CHAPPELL: This is a 40 year old colored man who was admitted to the John Gaston Hospital approximately three weeks ago. At the time of admission a history of a pistol wound of the left arm and chest approximately one to two hours prior to admission was obtained. On examination the patient was found to be drunk and in shock with a blood pressure of 70/40 and a pulse rate of 120. There were two wounds of entrance on the lateral aspect of the left arm and two wounds of exit on the medial aspect of the arm, with instability suggesting a fracture of the humerus. On the lateral wall of the chest were two wounds of entrance, one located at approximately the fifth intercostal space in the posterior axillary line and the other located at the seventh intercostal space in the anterior axillary line. X-rays of the chest revealed fluid in the right pleural space but no fluid was seen in the left pleural space. There was a considerable amount of free air under the left diaphragm and a lesser quantity of air under the right diaphragm. Shadows of metallic foreign bodies were found in both upper quadrants of the abdomen. The patient was treated for shock by intravenous fluid therapy and blood transfusion and was taken to the operating room approximately two hours following admission. Dr. Guice performed the surgery on this patient.

DR. HARWELL WILSON: Dr. Guice, suppose you tell us how you approached this patient in the operating room and what the findings at operation proved to be.

DR. CHARLES GUICE: Quite obviously this man needed exploration. The principal problem that confronted us at the time was the fact that the patient had a bilateral chest injury with demonstrable fluid on one side. Although there was no evidence of pneumothorax or hemothorax on the left there was no possibility that there was not an injury present on that side. One deci-

sion to be made was whether a tube was necessary in one chest cavity to protect this patient's respiration. Some hemothorax was certainly present. However, inasmuch as the patient evidently had a severe injury in his abdominal cavity and the chest seemed to be fairly well stabilized with no evidence of pneumothorax on either side, it was thought that aspiration would control the patient at least through the operative procedure after which time another X-ray could be made to check the patient's chest.

DR. EDWARD FRENCH: Dr. Guice, I would like for you to explain why you thought there was obvious abdominal injury in this case.

DR. GUICE: We realize that when there is a penetrating wound of the chest and this wound extends through the diaphragm that there can be air under the diaphragm without intra-abdominal injury. However, in this patient there was a large amount of air under the diaphragm in addition to rigidity and tenderness in the abdominal wall. In addition, the X-ray revealed that the bullets were overlying the upper portion of the abdominal cavity. This in itself does not mean a great deal inasmuch as the bullets could be lying in the abdominal wall either posterior or anterior but all of these findings combined led us to believe that there was intra-abdominal injury.

DR. HARWELL WILSON: Dr. Chappell, did you tell us what the hemoglobin estimation was on this patient?

DR. CHAPPELL: The hematocrit at the time of admission was reported at 39. The blood pressure on admission was 70/40, and intravenous fluid therapy, glucose and water, was started immediately on admission and a blood transfusion was started thirty minutes later. The blood pressure became stable within approximately an hour, with a systolic level of approximately 110. Also, in preparation for surgery, a thoracentesis was done on the right side, obtaining approximately 150 cc. of blood.

DR. HARWELL WILSON: Dr. Guice, suppose you go ahead now and tell us what was found at operation.

DR. GUICE: The peritoneal cavity was entered through a left rectus incision. On exploration a perforation was found in the

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transverse colon. This wound was closed with chromic catgut and the bowel was exteriorized. Further exploration revealed two perforations in the anterior wall of the stomach. It was found at this time that the spleen had been injured; therefore, a splenectomy was done. A perforation in the diaphragm was noted at the dome on the left. This was closed and the left lobe of the liver was freed from its attachments to the diaphragm and reflected to the right revealing another perforation in the diaphragm near the esophageal hiatus. This hole was also closed. Exploration of the small bowel and the remainder of the colon did not reveal any other perforations. The patient tolerated the procedure very well.

DR. C. E. GILLESPIE: I think in a case of this type we should emphasize the importance of a systematic type of exploration. In other words we should begin our exploration at some fixed point and work from that point until all important structures have been examined. It is worthwhile to emphasize the importance of examining the posterior aspects of some of the organs, particularly the stomach. On several occasions we have seen or read of patients who died as a result of an over-looked posterior stomach injury. This was seen several times during military service. I would like to ask Dr. Guice how the posterior surface of this stomach was approached and I would like to say just a word about perforations of the posterior aspects of the large bowel, especially on the right side. It is quite important to reflect the cecum and ascending colon by first incising the peritoneum and in some cases this is worthwhile even though we don't see any hematoma or any sign of injury on gross examination.

DR. GUICE: The gastrocolic omentum was opened in a rather large area and the lesser peritoneal sac was explored with especial attention to the posterior wall of the stomach.

DR. HARWELL WILSON: We have occasionally seen difficulties which are apt to arise from the neglected repair of a wound in the diaphragm. Only a short time ago we saw a patient who had had a chest complication resulting from a failure to properly handle such a problem. Dr. Yates,

would you give us your ideas regarding the management of these wounds.

DR. C. F. YATES: Penetrating wounds of the diaphragm bring up several problems that I think should be considered at this time. On opening the abdomen the wounds in the diaphragm, potentially at least, are sucking wounds of the chest and should be considered as such. Therefore, a very careful exploration of the diaphragm should be carried out; closure of the diaphragm is indicated as early as possible. Perforations at times are difficult to locate and may be multiple. Obvious perforations are frequently not the only sites of tear in the diaphragm. Most frequently they can be closed from below and attempt at closure should be done through this approach; however, it may be necessary to use the chest approach. The next most important thing probably is contamination either chemical, from the stomach content or bile in case of perforation of the liver, or bacterial in case of perforation of one of the viscera, particularly the large bowel.

DR. HARWELL WILSON: Dr. Beard, Dr. Guice mentioned that a small tear was noticed in the spleen and that splenectomy was done. What do you think about the general problem of injuries of the spleen as compared to injuries of the liver? Tell us what you think particularly with reference to methods for the control and prevention of hemorrhages.

DR. JOHN BEARD: In case the spleen has even a small tear or laceration an abnormal amount of bleeding is apt to occur. Certainly if there is any doubt at all as to whether the spleen is injured it should be removed. Even though a tear or laceration of the spleen may not produce bleeding at the moment, delayed hemorrhage may occur from the spleen even weeks or months later. Now in regard to the lacerations of the liver, these sometimes may be rather extensive. Lacerations of the liver can usually be controlled by the use of mattress sutures and gelfoam.

DR. HARWELL WILSON: I would like to emphasize briefly some of the principles which we feel are involved in the management of wounds of the colon in such traumatic cases. It should be remembered that

frequently the area of injury to the bowel following a high velocity gunshot wound is greater than appears at superficial examination. In this particular case the injured transverse colon was exteriorized. I believe it has been amply demonstrated that it is a safer procedure in the great majority of cases where the colon is injured in its transverse portion or in some area involving the left colon to exteriorize such a wound rather than to risk suturing the wound in the colon which has not been prepared for surgery. On the other hand there are some cases which may involve the cecum or ascending colon where it may be permissible or even preferable to close the laceration without any attempt at exteriorization. In such instances, however, it is probably safer to also decompress the colon on the right side by some method such as cecostomy carried out by the Witzel technic. Wounds of the colon which occur below the peritoneal reflection usually necessitate external drainage from below. All of the discussion today has centered around the injuries within the abdominal cavity or in the chest. This patient also received a severe injury when his humerus was fractured. I think it should be pointed out that although we have not given much attention in this particular discussion to the injury to the humerus that this is a very important injury. In this particular patient this has been managed apparently in a rather satisfactory manner. Following the debridement a hanging cast was applied and the correction of the deformity of the bones has been satisfactory. Dr. Guice, what are the future plans for the management of this patient?

DR. GUICE: This patient's postoperative course has been relatively smooth. The colostomy was opened on the third postoperative day and he has had no difficulty with the function of his colostomy. At the present time he is receiving bowel preparation for surgery and we plan to close the colostomy next week. It might be mentioned that postoperatively the X-ray revealed that the patient had hemothorax and pneumothorax on both sides, neither of which was severe. This chest condition necessitated bilateral thoracentesis over a period of several days and this was fol-

lowed by rapid clearing of the hemo- and pneumothorax. At the present time there is no evidence of either pneumothorax or hemothorax.

DR. HARWELL WILSON: The next case to be considered is particularly interesting because this patient has been treated for a large aneurysm involving the abdominal aorta. This is especially interesting because this condition until a few years ago had no satisfactory treatment. However, due to the introduction of homografts by Gross to fill defects of the aorta and of subsequent work by DuBost, DeBakey, Bahnson, and others, this condition can now be satisfactorily treated in a number of instances. Dr. Frank Wilson, will you please give us the history and physical findings in this patient.

DR. FRANK WILSON: This 66 year old white male was admitted to the Baptist Memorial Hospital because of a pulsating abdominal mass. One month prior to admission he was hospitalized because of nausea, vomiting, and diarrhea following ingestion of a laxative. At this time a pulsating abdominal mass was found. The mass gradually enlarged and the patient noticed a thumping sensation when lying on his abdomen. He had no abdominal or back pain but stated that for three years he had had pain in the lower legs after standing on his feet for several hours. These symptoms were greatly relieved by wearing elastic stockings.

The *past history* was essentially negative except that at the age of fourteen he had pain in his right hip and was forced to remain in bed for 6 months. He had intermittent pain in the hip until three years ago when it became severe and has been on oral cortisone, 25 to 50 mg. a day, for the past three years with some relief.

Physical examination: Temperature was 98.6 F., pulse 84, respiration 18, blood pressure in the arms 160/100, the left leg, 180 diastolic, and the right leg, 185 diastolic. The positive findings on admission were limited to the abdomen and right hip. In the abdomen there was a fusiform mass in the left mid-abdomen about 10 cm. in diameter extending from the left costal margin to just below the iliac crest. The mass pulsated and was non-tender. Liver and spleen were not palpable. The left hip was fixed at 115 degrees of flexion and in external rotation. The dorsalis pedis pulses were present and normal.

An aortogram was made which clearly demonstrated the lesion of the aorta. A diagnosis of aneurysm of the abdominal aorta arising about two centimeters below the renal arteries and ending about one centimeter above the bifurcation of the aorta was made. The aneurysm was excised

by Dr. Harwell Wilson, and the defect was bridged with a preserved graft.

DR. HARWELL WILSON: It has been mentioned that the aortogram demonstration that this was a favorable case for treatment by excision and grafting technic. At operation a long incision was made extending from just below the xiphoid to just above the symphysis pubis. The peritoneum was divided so as to free Treitz's ligament and the duodenum was mobilized to the right. The peritoneum was then divided over the large aneurysm.

A most important factor in determining whether such aneurysms are resectable or not is the relationship of such an aneurysm to the renal vessels. Accordingly, dissection was begun at the upper end of the lesion and an umbilical tape was passed around the aorta just below the renal vessels. In this particular case in order to give additional safety another tape was passed around the aorta just above the renal arteries. Tapes were then placed around the iliac arteries. After the aorta had been mobilized superiorly and the iliac arteries had been mobilized inferiorly, the most tedious portion of the dissection was begun. This consisted of separating the vena cava from the aorta. One small tear was made in the vena cava; however, this was controlled with fine silk suture without great difficulty. In addition to this there was another episode of slightly troublesome bleeding when one of the lumbar veins was torn; however, this was clamped without great difficulty.

The aneurysm was finally dissected free from all surrounding structures with the exception of two or three of the lumbar arteries emerging posteriorly. A clamp was then placed across the aorta just below the renal arteries, and a second clamp was placed just above the bifurcation. The aorta was divided and the aneurysm was excised. The additional vessels which had not been previously controlled were clamped at this point. Fortunately in this case it was possible to insert a graft approximately five inches long which had been previously prepared by the surgical research fellows for our artery bank. The graft was from the thoracic aorta. This graft was sutured in

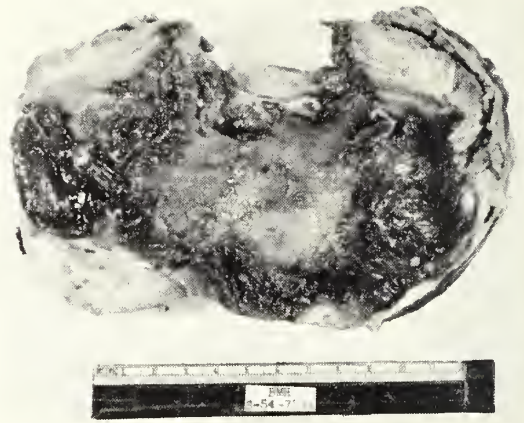


FIGURE 1. Large aneurysm of abdominal aorta as it appeared when opened in the Surgical Pathology Laboratory.

place with fine arterial silk and a continuous over-and-over suture was used. The aorta was very sclerotic and large plaques were present in the region of the lower suture line. At the end of the procedure there was practically no bleeding when the distal clamps were removed and two additional interrupted fine sutures enabled us to control bleeding from the suture line. The

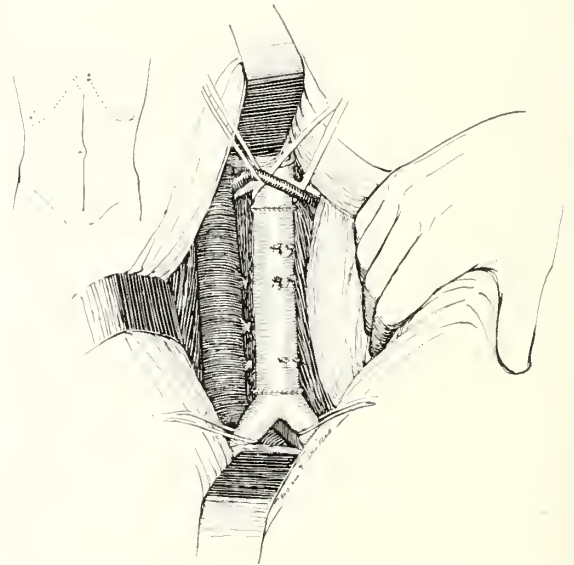


FIGURE 2. Drawing shows homograft in place as used to fill the defect caused by excision of large aneurysm of abdominal aorta.

patient was given blood replacement during the operation; however, no serious blood loss was noted at any time. Dr. Frank Wilson, suppose you point out some of the

important and interesting features in this man's postoperative course.

DR. FRANK WILSON: The patient's postoperative course was relatively uneventful for the first seven days except for an immediate postoperative elevation of the NPN. On the seventh postoperative night the patient had a sudden onset of severe pain in the region of the left scapula and shoulder which was not relieved by large doses of morphine. The pain persisted for several hours and then subsided and on the succeeding days he had similar but less severe episodes of pain. Chest X-rays at the time were negative except for some air underneath the diaphragm. There was no disturbance in the pulse and blood pressure during the attacks of pain. The patient was found to have an old cervical disc that could have been responsible for the pain. Also on the seventh day he developed a rather marked, generalized, macular rash which subsided upon withdrawal of penicillin.

DR. WILLIAM TYSON: It has been stated that this patient's postoperative course was remarkably smooth. The NPN was moderately elevated for several days following operation. However, during this time the patient's urinary output was adequate and the NPN gradually returned to normal. This patient had been taking cortisone for some time prior to operation because of his arthritis; therefore, it was considered wise to continue cortisone therapy following operation. This was done and the dose was gradually decreased.

DR. HARWELL WILSON: I think that it would be interesting at this time to get Dr. Bramlitt, one of our residents assigned to the Research Laboratory, to tell us exactly how this graft was prepared since, of course, we would have been unable to carry out the operation on the patient without the graft. Dr. Bramlitt, suppose you tell us in detail just how these grafts are prepared.

DR. E. E. BRAMLITT: This graft was prepared by the routine lyophilization technique advocated by Hufnagle and his group.

It was taken at autopsy, sterilized by thirty minutes' immersion in ethylene oxide, then immersed in a quick-freezing mixture of alcohol and carbon dioxide ice, left in the freezing mixture for five minutes, then packed in a dry ice container at which time a vacuum of 1/100 microns was produced in the tube. The graft was left in this environment for twelve hours, was then removed from the dry ice, but still kept under vacuum for another twenty-four hours, then it was hermetically sealed in a tube.

DR. HARWELL WILSON: Dr. Jabbour, how long do you think that grafts preserved by this method can be kept available and at room temperature?

DR. C. E. JABBOUR: Grafts preserved by this method can be kept at room temperature for two years; however, it is generally preferable to use the graft within six months.

DR. HARWELL WILSON: Aneurysms of the abdominal aorta illustrate only one group of lesions which may be very definitely benefited by the use of homografts of the aorta. Dr. Hardy, would you tell us some of the other diseases of the aorta that have been benefited by the use of homografts?

DR. JAMES D. HARDY: Aortic homografts have been used to bridge gaps in the excised coarctic segment of the thoracic aorta, they may be used to repair traumatic injuries in which a considerable segment of the artery has been injured beyond repair and they have been used to bridge gaps when the lower portion of the aorta is occluded as by obliterative diseases such as those caused by the Leriche's syndrome. If aortic grafts are as successful as it appears they may be, they will be widely used by many surgeons in the future.

DR. HARWELL WILSON: This patient, as has been shown, has enjoyed a very smooth postoperative course. It is also interesting that it now seems quite likely that lesions in all areas of the aorta may in time be successfully bridged by this technique.

CLINICOPATHOLOGIC CONFERENCE

City of Memphis Hospitals*

Cutaneous Amebiasis

History. E. B., colored male, age 40 years, was seen in October, 1951, for traumatic avulsion of the skin of the left thigh and ankle. The lesions were treated and grafted satisfactorily. At that time his blood pressure was 150/98; a few scattered, high pitched rales were heard throughout the right lung; urinary specific gravity was 1.014 and a serologic test for syphilis was negative.

He was next seen in January, 1954, with history of having been well until September, 1953, at which time he had abdominal pain and tenesmus that were attributed to eating raw peaches. There was associated fever but no nausea, vomiting or diarrhea. Three weeks later he suffered diarrhea with bright red blood, which lasted for 2 to 3 weeks. Tenesmus persisted but bleeding ceased. One week later small "pimples" or "boils" occurred around the anus. These were nontender, did not drain and cleared up in a few days, only to be replaced by larger "boils" that ruptured and drained. These "boils" coalesced and formed an 8 x 10 cm. ulceration of the perineum which was thought to be a carcinoma. The patient was admitted to the hospital for biopsy.

Fever was present during the period of the present illness and he also had a chronic cough productive of white phlegm. The patient frequently worked around septic tanks.

On hospital admission his temperature was 100° F., pulse was 95 per minute and blood pressure was 112/60. The man was poorly nourished, chronically ill and hiccoughed but was not in acute distress. There were moist inspiratory rales and expiratory wheezes over both lung fields. No abdominal masses or tenderness were noted.

About the anus there was an 8 x 10 cm. deep ulceration, the edges of which were clean but ragged. There was anemia (PCV of 22), and a leukocytosis (buffy coat—3.0 mm.). Abdominal X-ray revealed an over-all veil of density with absence of properitoneal fat lines. Heart was normal and the lungs were clear on the chest film.

A transverse loop colostomy was performed January 30, 1954. An *evisceration*, at the colostomy site was repaired on February 4. He apparently had a transfusion of reaction February 5.

Biopsy of the perineal ulcer was reported February 6, 1954. "Appropriate therapy" was instituted.

Further laboratory work revealed serum pro-

tein of 5.1 and 5.9 Gm. per cent, with a 1:1 albumin-globulin ratio. The anemia responded to the transfusion. The serum bilirubin level reached 13.7 mg. per cent, total.

During the remainder of his hospitalization the patient followed a slow, progressive downward course. (It was difficult to maintain his fluid and electrolyte balance.) There was a continuous yellow-brown drainage from around the colostomy and a fecal fistula developed at this site. He had bouts of paralytic ileus with vomiting. Later, the colostomy sloughed and resembled the perineal ulceration. He had a temperature elevation to 103° F. February 19, 1954, and died the following day, 24 days after admission.

Discussion and Diagnosis

DR. ROBERT MILES: This patient was a 40 year old colored male who is said to have completely recovered from an injury to his calf in 1951. This would seem to have no bearing on the subsequent developments in the case. At that time the only findings of interest were the rales in the right lung field. Serologic tests for syphilis was negative. Three years later he developed abdominal pain and tenesmus, attributed to eating raw peaches. There was fever but no nausea, vomiting or diarrhea at that time. After another three weeks he developed diarrhea with bright red blood in the stools, lasting two or three weeks. Tenesmus persisted but the bleeding ceased. A week afterward pimples developed around the anus. These disappeared a few days later and were replaced by "boils" which coalesced, ruptured, drained and formed a perineal ulceration 8 x 10 cm. in diameter.

History on hospital admission for biopsy revealed episodes of frequent fever during the present illness, and a cough productive of white phlegm. I think it is significant that the patient worked about septic tanks.

Physical examination revealed temperature 100° F., pulse 95 and blood pressure within normal limits. He appeared chronically ill but not in acute distress. The rales were mentioned again. No abdominal mass or tenderness were noted, remember that. The perineal ulceration was 4 cm. in depth, the edges clean, but ragged, and there was little bleeding.

Laboratory studies revealed anemia and leukocytosis. An X-ray film of the abdomen revealed some increased density and absence of the properitoneal fat line, which

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may mean fluid and/or peritonitis. The heart and lungs were normal on chest X-ray.

Now we come to an incongruity. A transverse loop colostomy was performed, January 30, five days after admission for biopsy (which was not done until later). In other words, the surgeons were worried either about the progressive nature of the perineal ulceration and performed colostomy to divert the fecal stream in an attempt to ameliorate the infection, or they may have considered carcinoma strongly and performed the colostomy to overcome associated obstruction or infection. Five days later evisceration occurred and on the same day the patient suffered a transfusion reaction of undescribed type and severity. The day prior to evisceration the ulcer was biopsied and "appropriate" therapy was instituted. One might question the use of the term "appropriate," considering the progressive course terminating in demise. Laboratory studies revealed a low serum protein with reversal of the A-G ratio. Anemia had responded to transfusions. Serum bilirubin increased to 13.7 mg. total. During the remainder of his illness, trouble was encountered in maintaining the fluid and electrolyte balance. A yellow-brown discharge exuded from around the colostomy and a fecal fistula developed. Almost every complication occurred that is possible with a colostomy,—infection, obstruction, fecal fistula and slough. The latter gradually enlarged and produced an ulceration resembling the one on the perineum. This is an important point which will be referred to later. The temperature rose to 103° and the patient died on the 24th day after admission.

Several entities come to mind in the differential diagnosis. Let's rule out the "big three" first, that is,—carcinoma, tuberculosis and syphilis.

Carcinoma certainly should always be thought of in considering the etiology of such lesions and it was a prime consideration when the patient was admitted. Against carcinoma was the lack of evidence of obstructive symptoms of left sided colonic carcinoma. The description of pimples coalescing and breaking down to form a

large ulceration is unusual, too. The relatively short duration of the illness with the production of such a large ulcer would be unusual unless the carcinoma was ultra fast-growing. The fact that no improvement followed colostomy would be contrary to the expected effect if the lesion were carcinoma. Several aspects of the case call attention to the possibility of *tuberculosis*: rales in the chest, cough with expectoration of phlegm, a chronic debilitating disease, weight loss, anemia, etc. Intestinal tuberculosis may cause abdominal cramps, diarrhea, and on occasion, perirectal abscesses, fistulas and inflammatory conditions about the anus. The negative chest X-ray did not support the diagnosis of tuberculosis, unless it was of the bovine variety. The type and growth rate of the lesion were not suggestive of tuberculosis; generally, it is manifested by fissures or fistulas in-ano accompanied by low grade infection rather than a large fairly clean lesion with the edges as described here. Tuberculosis should have responded to "appropriate therapy." It would be helpful in diagnosing this case to have the biopsy report and results of smears and cultures (pyogenic and acid fast). Proctosigmoidoscopic examination and barium enema X-ray studies might aid in establishing the diagnosis of tuberculosis. The development of a peculiar lesion at the colostomy site similar to the perineal ulcer was not suggestive of tuberculosis unless the loop of transverse colon employed were tuberculous.

Syphilis should be ruled out, but we should be most surprised to find it. However, syphilitic papular and tubercular nodules in the perianal region could coalesce, ulcerate and produce a lesion similar to this. The negative serology, and, if biopsy was suggestive, the absence of improvement on "appropriate therapy" would seem to rule out syphilis.

Next, let's consider several other deserving entities beginning with *lymphogranuloma inguinale*. That the patient was colored, with a rectal lesion of bizarre etiology is suggestive. However, I don't believe we need to consider it seriously because of the following facts: the sex, rectal lesions are more common in the female; the type of

lesion—when the rectum is affected a stricture may result, which did not occur here; the complication at the site of the colostomy with an ulcer similar to the perineal ulcer is not suggestive of this entity; and colostomy should have been followed by improvement. The result of a Frei test would aid in ruling out lymphogranuloma inguinale.

The rectal bleeding, anemia, diarrhea, fever, weight loss, the initial perineal lesion similar to perianal abscesses and fistulas and exacerbation following colostomy plus the complications at the colostomy site are suggestive of *ulcerative colitis*. The latter complication might be expected if one performed colostomy for acute ulcerative colitis. If surgery is required ileostomy, possibly with colon resection, should be preferred. Against the diagnosis of ulcerative colitis are the size and character of the ulcerative perineal lesion completely surrounding the anus, the rather short fulminating course (usually ulcerative colitis is more protracted), and possibly the patient's race. Proctosigmoidoscopy and barium enema X-ray examinations would help to clarify this possibility.

Regional ileitis in the small intestine should be considered by virtue of its propensity for subacute perforation, abscess and fistula formation. The character of the stools, the relative brevity of the course of the disease, the perineal lesion, and sequence of events after colostomy do not support this diagnosis. Again, sigmoidoscopy and barium enema X-ray would be of value if negative and small intestine X-rays with the characteristic "string-sign" would be diagnostic.

The possibility of *ordinary perirectal abscess* with multiple fistulas would not be entertained strongly because of the course of the disease, nature of the lesion and failure to improve on medical therapy and colostomy.

Last, but not least, we come to *amebiasis*. The only factor against this possibility is the rarity of cutaneous perianal lesions. The entire history is suggestive, including his occupation and particularly the progressive course with bouts of tenesmus, cramping and bloody diarrhea. An analysis of the

symptomatology in 200 cases of intestinal parasitism revealed that 30 per cent had blood in the stools,¹ so parasitism should be considered in this diagnostic problem with blood in the stool. The patient lost weight, became anemic and had hypoproteinemia and, for some reason, developed perianal ulceration. Little is known about the epidemiology and pathogenesis of amebiasis. Why one patient recovers promptly from an acute episode, while another follows a fulminating course is uncertain. Seventy-five per cent of the cases of amebiasis are of the cecal variety, the remainder have lesions primarily in the rectosigmoid region. It is probable that this patient had the latter type infection which was progressive because of virulence of the organism, impaired resistance of the patient, or lack of treatment. The anal crypts probably became involved by the invading amebas and the perianal lesion followed with the same sequence as the usual fistula in-ano except for the fact that a large amount of perianal and perineal tissue was destroyed leaving a perineal ulceration. This may have been due to the lytic nature of the amebas and the fact that they do not invoke the same inflammatory reaction as do pyogenic bacteria.

The colostomy may have aggravated the condition by virtue of disturbing the natural defense against the amebiasis which undoubtedly involved the entire colon. Many authorities agree that surgery of the large intestine is contraindicated in the presence of amebiasis and may serve to set off a fulminating process with perforation, peritonitis, and possibly spread via the portal tributaries to the liver with amebic hepatitis and possibly abscess. McCoy and Hardy² in their review of the Chicago epidemic of 1933-34, state that appendectomy was performed in thirty-two cases that were diagnosed as appendicitis with thirteen deaths,—a mortality rate of 40 per cent. In the same series, six hemorrhoidectomies were performed with one death. Certainly, before surgery is carried out in amebiasis patients the amebic infection should be cleared up.

In my opinion, this patient had an amebic infection which probably began in the rec-

tosigmoid region and progressed to involve the entire colon and perianal region with the production of a large ulcer in this location. The colostomy may have caused a more fulminating course with perforation, peritonitis, fecal fistula, and cutaneous amebiasis of the abdominal wall about the colostomy site. Amebic hepatitis and possibly liver abscess may have occurred, if one considers the rising serum bilirubin and reversal of the A/G ratio. In an analysis³ of 16 cases of amebic abscess of the liver the A/G ratio was occasionally reversed, but usually the liver function tests reflected no abnormality. Jaundice was not observed in these cases.

It will be interesting to hear the biopsy report, as well as the results of sigmoidoscopic examinations, smears and cultures for ova and parasites, pyogenic and acid-fast bacteria and fungi, if they were made.

DR. WARREN KYLE: Thank you, Dr. Miles. Is there any discussion from the floor, any questions? The student diagnoses covered a good many things Dr. Miles talked about. Amebiasis was a fairly frequent diagnosis. Some of you admitted you knew the diagnosis ahead of time since I think one group of you saw this patient in surgery clinic. A good many spoke for fungus infection, actinomycosis and other fungi, carcinoma and tuberculosis. I don't believe syphilis was mentioned. Are there any questions? If not, the pathology will be discussed by Dr. Albert Hand.

Pathology

DR. A. M. HAND:* Autopsy was performed 5 hours after death. The body was that of an emaciated and dehydrated colored male. Length was 69.5" (172 cm.) and weight was 92 pounds (41.8 kilograms). A loop of colon extended through the colostomy site. This opening was 8 cm. in diameter and the adjacent abdominal wall was dull gray and necrotic. The peritoneum was dull with fibrin precipitated on the bowel surfaces, and 200 cc. fibrinosanguinous thick fluid was present in the abdominal cavity. The liver edge was at the costal margin and the spleen was not visualized

as the abdomen was opened. The perianal ulceration was covered by dense granulation tissue and the skin edge appeared viable and relatively clean. Measurements and weights were as follows:

Organ	This Case	Normal
Heart	280 Gm.	250-400 Gm.
Cardio-thoracic Ratio	10 Cm./26 Cm.	Less than 0.5
Right lung	550 Gm.	350-500 Gm.
Left lung	370 Gm.	300-450
Liver	1650 Gm.	1100-1400 Gm.
Spleen	40 Gm.	40-90 Gm.
Pancreas	90 Gm.	80-120 Gm.
Adrenals	17.5 Gm.	10-20 Gm.
Right kidney	180 Gm.	150-200 Gm.
Left kidney	210 Gm.	160-210 Gm.
Brain	1350 Gm.	1200-1500 Gm.
Right diaphragm leaf	5th rib	5-6th
Left diaphragm leaf	5th rib	6-7th

Gross Organ Description. The ileal serosa was rough and shaggy and the lower bowel wall was thickened and firm with mucosal ulceration evident in this region. A perforation, 0.5 cm. in diameter, was present in the ascending colon. Ulcers were present diffusely in the cecum, ascending colon and in the rectal mucosa. No hemorrhoids were noted. The epicardium was glistening, the heart valves and coronary arteries were not altered, no mural thrombi were observed and the myocardium was firm and red-brown. The contour and elasticity of the aorta were well preserved. Yellow mucopurulent material was present in the bronchioles and pink fluid was plentiful on the cut surface of the right lung, and to a less degree in the left lung, but no consolidation or atelectasis were evident. The liver was deep red-brown, the lobulations of the cut surface appeared normal and no hepatic abscesses were found. The spleen was not enlarged and the pulp was firm. The adrenals were free of hemorrhage. The renal surfaces were moderately granular but the cortico-medullary junctions were bilaterally distinct, the right renal cortex measured 7 mm. and the left renal cortex measured 6 mm. The renal pelvic mucosa was smooth bilaterally. The ureters were not dilated. The urinary bladder was collapsed and free of urine, and the prostate was not enlarged or hard. In

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the cranium, the pia-arachnoid membranes were translucent and coronal sections revealed no abscesses or hemorrhage.

Microscopic Organ Description. Necrosis, cellular debris and granulation tissue characterized the tissue from the perianal ulcers, but no amebas were demonstrated in the autopsy sections from this region. *Amebas were seen in abundance in the section made from the biopsy specimen.* (Figure 1.) Mucosal ulcers from the lower

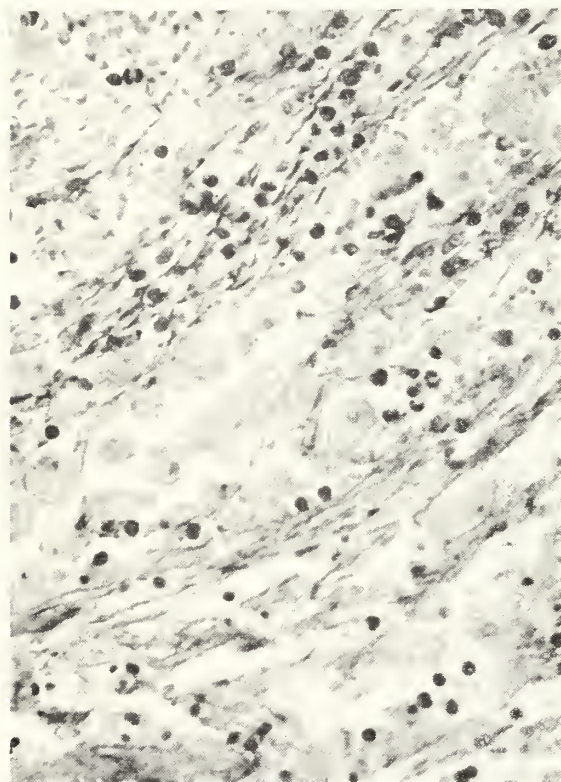


FIGURE 1

ileum were superficial, contained necrotic debris, polymorphonuclears and many phagocytic monocytes. Ulcers in the ileum and colon revealed marked undermining of the mucosa. No amebas were demonstrated in multiple autopsy sections from the bowel. The liver was free of inflammatory reaction or undue congestion. In the lungs, numerous bronchioles and the adjacent parenchyma contained fibrinopurulent exudate and edema was present in sections from both lungs. No myocarditis was observed. The renal arterioles were moderately thickened and scattered glomeruli were hyalinized. The microscopic appearance of the

pancreas, adrenals, prostate, brain, lymph nodes, skeletal muscle and bone marrow was not altered.

Pathogenesis. The diagnosis of amebiasis in this case was established by study of the surgical biopsy of the perianal ulceration (cutaneous amebiasis). The skin lesions were undoubtedly secondary to intestinal amebiasis, and antemortem culture of the biopsy specimen was also positive for amebas. I believe that the patient was improving clinically when he suffered an intestinal perforation and generalized peritonitis. Krutzer's⁴ survey included less than 50 proven examples of cutaneous amebiasis. The lesion has been seen in this hospital before, as noted by McVay and Sprunt.⁵

Three types of *Cutaneous Amoebiasis* are as follows:

- 1) Post-surgical, or following rupture of a viscus (usually colic, appendiceal or hepatic).
- 2) Perianal, associated with amebic colitis (as in this case).
- 3) Cases without direct connection with a viscus.

Final Pathological Diagnosis

I. Amebic colitis

- A. Ulceration of perineum, massive, cutaneous amebiasis

Diagnosis: (surgical biopsy) *Endameba histolytica* infestation of fibroadipose tissue.

1. Transverse loop colostomy, with breakdown
- B. Perforation of ascending colon
 1. Generalized peritonitis
 - a. Pulmonary edema, moderate
 - b. Emaciation
 - c. Dehydration
 - C. Bronchopneumonia, bilateral

DR. HAND: Dr. Miles, have you had experience with amebomas of the colon causing intestinal obstruction?

DR. KYLE: Dr. Miles has had considerable experience at Kennedy Hospital and has written more than one paper on the subject and I'd like for him to go ahead and answer Dr. Hand's question and also comment in any way he sees fit on the problem of amebiasis. Dr. Miles.

DR. MILES: First, to answer Dr. Hand's question about ameboma. We¹ reported

such a case in 1951 and I think it's a very timely thing to bring up, because most of the time this cannot be differentiated from carcinoma. Pathologically, it is a granulomatous lesion that may cause the signs and symptoms of carcinoma of the colon. X-ray examination usually reveals a filling defect in the bowel that is suggestive of carcinoma. However, if the symptomatology, past history, and the general examination of the patient are not in accord, and *one is suspicious*, it is well to carry out stool examinations and cultures for parasites. If amebas are present then one might consider ameboma more strongly, remembering that *a patient with carcinoma may well have amebiasis*. If the lesion does not disappear under anti-amebic therapy, operation is indicated.

I really don't have anything to add about the problem of amebiasis in general except that I believe we tend to have too much or too little enthusiasm about it—a middle of the road policy would be best. I'd like to ask several questions about this particular case. When was the emetine started? Were there any smears or cultures? Was the diagnosis made on the biopsy alone?

DR. KYLE: It was started February 5 and was continued through February 12.

DR. MILES: On the 5th through the 12th. That and Aureomycin, wasn't it? Was he given penicillin?

DR. KYLE: Yes, penicillin and streptomycin. These were started February 6.

DR. MILES: That was seven days after the transverse colostomy was performed. In what dosage was the emetine given.

DR. KYLE: One grain daily for six days.

DR. MILES: It was my impression that emetine is usually administered for a ten day period (one grain subcutaneously each day). Some give it for longer periods. We have all been impressed by emphasis in the literature on the dangers of myocarditis associated with emetine therapy, so much so that when we first became interested in this problem it was of great concern. We watched the patients closely, checking the pulse, blood pressure and heart frequently through the day and followed the patients

with EKG's. During World War II many physicians had extensive experience with amebiasis in the South Pacific where hundreds of cases were healed with emetine without any adverse effect.⁶ We have probably over-emphasized the danger of emetine. Not that it isn't dangerous, but I don't believe it's quite the monster it's supposed to be.

DR. KYLE: There were no ameba found in the tissues at autopsy which indicates that the emetine therapy may have done some good. I certainly agree with you that this man didn't have very much aureomycin and early diagnosis with adequate therapy might have saved his life. There's one thing that is quite striking about amebiasis. There is a high instance of the finding of the amebas in the stool. I think 15 per cent of the ward patients in this hospital in one study were found to have infestation with amebiasis. Despite that, the finding of amebic colitis or liver abscess at autopsy is extremely rare. Isn't that right, Dr. Hand? It seems reasonable, as many authorities believe, that many people have infestation with amebas, are asymptomatic carriers and may never have the disease. Of course, when such people are discovered, I think it's reasonable to treat them since they are harboring a pathogen. Despite the widespread occurrence of amebas in the population, the incidence of serious disease is relatively uncommon. The danger is that if we forget about amebiasis too much we don't recognize the serious manifestations of the disease when they occur.

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President's Letter



DR. THOMPSON

Just the other day I received a letter from our Executive Secretary with the simple statement written across the single page—"That time is here again—Time for the President's page." I turned the line over in my

mind and the thought came that really "That time is here again."

We had just passed the week when all America lifts up its eyes to the one God who is Ruler of our Universe and gives thanks for the many blessings which we have received during the past year. Following this we of the medical profession praise the powers that allow us to practice a free medicine for the mutual benefit of patient and practitioner.

And now we approach that time when all America is filled with the spirit of the Great Physician. I am not referring to the tremendously commercialized Spirit of Christmas but that Spirit of Christmas nurtured in the words of Christ which has come to be known as "The Golden Rule." The spirit of doing unto others as you would have them do unto you is the very basis and fundamental premise on which all medical ethics is based. This is

the fundamental requirement of moral principles in dealing with our colleagues, our patients and the public generally.

Dr. J. M. Donald, President of The Medical Association of the State of Alabama, recently wrote "most of our problems in public relations would be solved if more physicians practiced The Golden Rule. It would eliminate excessive fees, fee-splitting and ghost surgery, and it would reduce to a minimum the number of unnecessary operations. It also would eliminate the practice of a few who would attempt operations for which they are unqualified."

And then the Spirit of Christmas is manifest in the every day practice of medicine and especially through our Tennessee Medical Foundation in His words as He spoke to his disciples:

"I tell you, insofar as you did it to one of the humblest of these brothers of mine, you did it to me."

It is our wish that the truest Spirit of Christmas be with you all during this joyous season and with His guidance we enter the New Year determined as never before to practice The Golden Rule.

THE JOURNAL

OF THE
TENNESSEE STATE MEDICAL ASSOCIATION

Published Monthly

Devoted to the Interests of the Medical Profession of
Tennessee

Office of Publication, 321-325 Doctors Building, Nashville,
Tenn.

Acceptance for mailing at special rate of postage provided
for in Section 1103, Act of October 3, 1917,
authorized July 15, 1932.

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DECEMBER, 1954

EDITORIAL

AS OTHERS HEAR YOU

Recently I was one of an audience of three hundred business and professional men, gathered to hear an executive of a national concern make an address on a very engaging subject. Unfortunately, the address was so poorly delivered that the effect was lost on the audience and the speaker was probably embarrassed by the apparent inattention.

It is not within the province of each of us to be easy before an audience, to speak well or fluently, or to have the much desired poise of a gifted speaker. However, physicians are frequently invited to be speakers before both professional and lay groups. They as a group have had more than the average amount of experience listening to talks, lectures, and sermons from speakers, some good and many poor. From these experiences it would appear that we should acquire some of the simple fundamentals of public speaking, or at least avoid the more palpable faults.

In the first place we should not accept speaking assignments if we do not have the time or inclination to make the address

worthwhile to the audience. If we accept the courtesy of the invitation we owe it to ourselves as well as to the guests to perform to the best of our ability.

Having accepted an invitation to appear on a program, and having made reasonable and proper preparations, our next obligation is to deliver it to the best of our ability. The following suggestions would appear basic and clearly within the realm of any amateur speaker.

1. Stand erect, face the audience squarely and speak directly to them or directly into the microphone. This will engage the attention of the listeners at the onset and put them "on the same wave length with you."

2. Acknowledge the chairman who introduces you, the distinguished guest and then the audience. It is poor form to launch into an address without this formality.

3. Do not apologize for what you have to say, for short notice or other delinquencies that you may feel. If you have to apologize you should not speak, and if your address is to be a poor one, the audience will find it out soon enough without any mind conditioning from you.

4. If you are to read your paper, be certain that the pages are in order, that the English is correct and the subject matter lucid. Nothing is so distracting as to have the essayist pull a rumpled manuscript from his pocket, fumble through it, and then "back and fill" through typographical or rhetorical errors.

5. If you are speaking without a manuscript, have the theme of your talk in mind so that you do not ramble.

6. Try to omit the "ers", the nervous coughs and other manifestations of uneasiness.

7. Look at your audience from time to time. Pause between salient points or paragraphs so that your audience can "catch up with you."

8. Be brief. A twenty-minute address is about all that the average amateur can deliver well, and is as much as the audience can absorb with comfort.

9. It is well to interrupt your speech with a joke or some other appropriate remark, but be certain that such remarks are non-

offensive, are suitable for the occasion, and if a joke, it does not contain too many barnacles.

10. When you have concluded your speech do not thrash around for a stopping place. Likewise do not drop the bottom out of it. Bring it to a logical conclusion, thank your host and audience and sit down.

Henry B. Gotten, M. D.



WHAT IS THE ANSWER?

Several months ago a highly intelligent, able and successful business man asked me, without warning, "Doc, when are the doctors going to give us a 'blue book' of doctors?" Though I guessed what he meant, I asked what he had in mind. He answered, "You know what I mean. When is the profession going to tell us what doctors are honest, safe and good?" I hedged by saying he knew I would advise him anytime he needed any special attention. His answer was, "I'm not worrying about myself. But how are the people in general going to know?" and added bitterly, "You and your ethics!" He said he knew I was not free to answer any questions which he might ask about doctors. He accused us of being derelict in not having an equivalent of the Better Business Bureau.

This business man then went on to build up a case against some of the profession which was not pretty. Quite obviously he had not been coached on the subject. He is a man who has had his eyes and ears open. He showed some knowledge of tissue committees and hospital staff organizations. He did not have to refer to the scurrilous articles which have appeared in some lay magazines. I gather that from experiences among his employees, general knowledge, and items picked up here and there he had pieced together a penetrating analysis of what *may* go on at times in medical and surgical practice.

In general this man has a high regard for the medical profession but withheld no punches on the subject of that part of the Code of Ethics which protects the dishonest doctor. He indicated that other than getting the advice of a physician in whom one

had confidence or observing to whom the physician sent members of his own family, the average person was at the mercy of the medical profession. He insisted that the medical profession alone had the key to a "blue book" as he put it, and that it was the obligation of medical societies to issue such a list.

I tried to explain how difficult it is to catalogue ability, how the practice of medicine is not a "100 per cent" sort of activity, how mistakes will be made by all of us, how our judgment will be in error at times, and the like. Of all this, this business man was aware and he accepted it, expecting no one to turn in a perfect score. But he refused to accept my statement that any cataloguing of physicians on "honesty and safeness" was difficult if not impossible, and asked, "How do you decide who shall do what in a hospital, and how do you decide who shall be on a hospital staff. If you can pick them for that you can pick them for a list for the public."

It was a clear-cut indictment of the medical profession by a layman for closing our eyes to facts we may well know. Fees were not mentioned once. Before changing the subject, my friend remarked, "Doc, if you get socialized medicine it serves you right."

The American Medical Association has been forced by the sniping articles in the lay press to talk about a "house-cleaning" campaign to pick the rotten apples from the sound ones. This will be a most difficult task.

The conversation I have recorded is of interest on this score for it indicates the thinking of an intelligent layman who has garnered telling information from among his employees. A grievance committee does not satisfy him on two counts. First, the "damage has been done," secondly, he points out the patient cannot judge the poor practice or needless surgery which have been done and therefore are never brought to light.

Never before have I been left with such a sense of dishonesty through an indictment of the profession for its protection of a few who do not measure up to the expected. On the numerous occasions I have thought of this conversation, in the intervening

months, I have had an uncomfortable sense of warmth around the neck.

R. H. K.

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DECEMBER IS THE MONTH

This is the last month in which to take income tax deductions.

On these pages in August appeared a resume of what the physicians of this Country have contributed to the American Medical Education Foundation. Of 18,000 contributing physicians, there were 34 from Tennessee giving a total of \$896.00. The medical schools of Tennessee received \$79,198.00 in 1953. The A.M.A. is recommending that each physician give \$100.00 to the American Medical Education Foundation. It is hoped that Tennessee will have a better showing in 1954.

And as the year draws to a close, also remember the Tennessee Medical Foundation, your Association's means of constructive activity in providing adequate medical care in Tennessee. Gifts to this Foundation also are tax-deductible.

R. H. K.

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Special Report

In order that the membership may know of some of the activities of its committees and of the Medical Foundation, this report is being recorded in the Journal. It is the report of Dr. B. M. Overholt, Chairman of the Liaison Committee to the U.M.W.A. and the Committee on Medical Care. This was presented at the Third Annual Conference on Medical Care in Bituminous Coal Mining Regions of the U. S.

Liaison with County and State Medical Societies

B. M. Overholt, M.D.

Knoxville, Tennessee

From the very inception of the First Charleston Conference it became obvious to the UMWA Liaison Committee of the Tennessee State Medical Association that fundamental concepts concerning the objectives of the Liaison Committee were of major import in arriving at any decisive action. Liaison with County and State

Medical Societies is fraught with complications depending upon many variables, such as changing personalities of officers, and a variety of opinions. In evolving programs for medical care it should be recognized that there are enormous complexities to contend with and that an essential understanding of problems have not been universal either among officials of State and County Medical Societies or among the people. Too often our principles are jeopardized by details and fundamental problems and objectives are overlooked in the discussion of petty and relatively unimportant arguments which actually have nothing to do with an overall long range program for solution of any medical care problem.

It was obvious to the Tennessee Liaison Committee that it was important to follow the advice and recommendations of the First Charleston Conference in many respects and it was our feeling that before approaching County and State Medical Societies with any program for their approval that broad fundamental concepts should be first adopted. We gained the inspiration at the First Charleston Conference that the Liaison Committee to the UMWA Fund should be broadened both regarding their personnel and concepts of objectives affecting many aspects of the field of medicine. With this in mind and after considerable work the statement of the Tennessee Delegation to the Second Annual Conference on Medical and Hospital Problems in the Bituminous Coal Mining Area, held at Charleston, West Virginia in September of 1953, was formulated. This statement, we consider to be a key conception in development of effective liaison with State and County Medical Societies. It is a declaration, so to speak, of the Bill of Rights which would chart the path of organized medicine in Tennessee toward the goal of better medical care for our people.

The State Medical Association of Tennessee stands in the position to materially assist and insure the provision of good medical care to the people of the State of Tennessee. We learned that communities are really anxious for help and we embarked on a program of setting up a structure

whereby people could come to us for assistance in solving the medical care problems in their community. Also, we assumed that the United Mine Workers of America were part of our medical responsibility and not a separate component and that medical care problems of the coal miners were the medical care problems of the people of Tennessee. We are satisfied that we are on the right track. The medical officers of the Welfare Fund are participating members of the State and local Medical Society. The interests of the Fund, in the main, parallel the interests of organized medicine. The Fund has been, as a matter of truth, a significant force for the improvement of medical practice and while there has been some individual differences of opinion at times, there has never been any lack of cooperation in bringing about a resolution of problems.

Now what were the things that we did to establish a firm groundwork before attempting a program at State and County level of organization? First, in order to achieve these objectives, the Tennessee Medical Association formed the Tennessee Medical Foundation. This was a non-profit organization which lent permanence and continuity to a program. The Board of Directors of the Foundation were more permanent in effect than committees of the House of Delegates. The Foundation could accept grants, benefits and donations to carry on its work of promotion of better medical care. The Foundation appointed an executive committee on health and medical care problems in the State of Tennessee. This committee on health and medical care actually usurped much of the work projected for the UMWA Liaison Committee remained with a three man membership but the Foundation Committee was broadened numerically so it did not consist of a small group or element but included representatives from many phases of medical services. In addition, the committee drew freely for suggestions and assistance upon the universities, the medical schools, the Farm Bureau, the Public Health Department, the Tennessee State Dental Association, the State Nurses' Association, various labor

unions, nutrition experts, school officials, county courts, the Woman's Auxiliary to the Medical Association and certain Women's Clubs.

At all times this committee worked in close cooperation with the various committees of the Tennessee State Medical Association and with all other interested groups in communities which would have any bearing upon the solution of medical care problems.

The second step was the procurement of money and the employment of a full time Field Secretary who would have the necessary time to correlate all of the facets of this organization which had to bear on any particular problem.

The third thing was then to set down our specific objectives of what we wished to accomplish, and with this in mind the following were drawn up:

- (1) To visit communities and discuss the problems with all interested parties.

- (2) To assist in recruitment of physicians to fill the needs of the community.

- (3) To sponsor a system of specialist consultation services and to develop the key position of the general physicians and general practitioners in relation to the fractional contribution of the specialists.

- (4) To integrate the contribution of the State Public Health Services and the voluntary agencies to the health of the communities through the family physician.

- (5) To extend an organized program of post-graduate training to the rural areas with cooperation of the universities and available medical talent in the vicinities of rural services, and to encourage and assist the rural general physician to participate in special training.

- (6) That local prepaid plans be established where appropriate in substandard areas.

- (7) That both labor and management and certain communities be invited to participate in the evolution of such prepayment plans.

- (8) That medical schools by assuring continuation of contracts to provide resumption of training toward specialty board status could select and persuade young physicians to staff marginal area clinics for reasonable periods.

- (9) That the Tennessee State Medical Association develop a comprehensive voluntary prepayment program as part of the Tennessee Plan at the earliest possible moment.

- (10) That as a basic policy the plan of establishing a general practice facility as health centers in rural areas shall be community sponsored and nonprofit under the direction of a board of local

citizens. That the health and medical care committee of the Tennessee Medical Foundation shall be responsible to the community board for the quality of medical care rendered in these institutions and shall take such steps as may be deemed necessary to advise, counsel and guide the quality of medical care to be rendered in these facilities by agreement with a community board.

This basic program was then taken to the Board of Trustees of the Tennessee Medical Association for approval. We feel that this was an essential preparation for future relations with the State Association and County Societies. The stamp of policy approval of high echelons in the state must be obtained before proceeding with any definite long range program. These objectives were approved by the Board of Trustees and the proposition was then taken to the House of Delegates of Tennessee Medical Association. Not only did the House of Delegates approve the broad objectives of this program but also made available ten thousand dollars to the Tennessee Medical Foundation as an expression of their good will.

The approval of the State Association having been obtained, the next step was to secure the cooperation of the various county medical associations. Again we feel that certain ground work and diplomatic public relations is important. Our approach has been one of presenting the problem to the executive committee of the County Medical Society or to the officers of the County Medical Society and obtaining their reaction first. In passing we feel that it is a real compliment to the men in the County Medical Societies that in every instance the County Society has approved and been found to be most enthusiastically cooperative.

Having obtained the approval of the officers or the executive committee of a given County Medical Society, the next step is to bring it before the membership of the County Medical Society itself. We have been proceeding slowly. Not much time has elapsed from the standpoint of the solution of medical care problems on such a broad basis. We have necessarily selected only certain target areas in order that experience might be gained. The county societies that we have worked with have been

in those counties where mining has been a fairly prominent part of the medical care program.

Thus, we can speak from relatively limited experience but so far our experience has been very favorable. Solutions have been worked out in several ways. In some areas, for example, it was felt that the establishment of a clinic nearby another doctor's office might reduce the physician's practice. This problem has been approached directly. The full-time Foundation Field Secretary along with our State Public Service Director expert, Mr. Ed Bridges, and other parties involved, have gone directly to the physician concerned and placed the problem before him. In every instance, so far, once the physician understands the problem, he has cooperated in every respect. Actually he has been the one that has sponsored the introduction of the young physician to the local Medical Society.

In Knoxville, for example, the president of the Academy of Medicine, Dr. Geo. Inge, wrote a personal letter to every member of the Academy of Medicine personally asking that each man become a member of the Tennessee Medical Foundation, both financially and in spirit, and that those physicians who wished to participate in a consultative service to the various rural areas so designate their desires by sending in a card to the committee on health and medical care of the Tennessee Medical Foundation.

So far in the Knoxville area fifty members of the Academy of Medicine have designated their willingness to serve as consultants for the Tennessee Medical Foundation to the various rural areas. The Knoxville Academy of Medicine is arranging a rotation service for these various specialists. So far the rural general practitioners have found them very helpful and it has worked very well in this respect:

(1) If he runs into a problem and wants some help he knows whom to call immediately.

(2) There is a designated clinic day. For example, if the general practitioner has some problems in pediatrics for a particular month, there is a designated day that the problems in pediatrics be brought to the clinic so that the visiting consultant can help him with these problems right on the spot. The people like it, the doctor likes it.

(3) The specialists in any medical center approve this in principle because it puts consultative services on high level. The cooperation is the key to the local medical society in every respect. It should be completely understood that if the patient desires another consultant, the patient has the right of his or her own choice, and if the general practitioner desires another consultant that is likewise his choice.

Once the problem is approached on the basis of broad fundamental principles, we have found that minor problems assume much less proportion and thus become easier of solution. The evolution of a program and the proper approach to communities through their County Medical Societies is extremely important. If the approach is made in a haphazard manner with no real objectives in mind the amount of liaison obtained will vary in direct proportion to the quality of the approach. Once fundamental objectives have been approved by responsible medical authorities in the state then the program can filter down through the county medical associations.

We have found that once a State Medical Association takes the steps toward the solution of problems of medical care that we have been taking in Tennessee, that labor organizations are anxious to come more than half way and work with us. Previously there was no organized place or system of meeting where this kind of problem could be thrashed out. Now in the plan that we have in Tennessee, we have a place where people know they can take their problems and where solutions can and will be worked out. Unless substantial and effective measures along this line are undertaken by Organized Medicine, we will have no shoulder on which to weep when someone else decides to do it for us. It should be made clear, however, that the procedure of the State Medical Association of Tennessee is not dictated by fear but by prudence and obligation to the ethics of medicine to which we all must dedicate our lives.

DEATHS

Dr. Webb B. Key, Aged 54, Memphis, died when struck by an automobile on November 12th in Fort Lauderdale, Florida.

Dr. D. Taris Brendle, 81, Englewood, died October 25th following a prolonged illness. He had been in practice in and around Englewood for 50 years.

Dr. Robert Miller Young, 71, Knoxville, died October 19th at Fort Sanders Hospital in Knoxville.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis and Shelby County Medical Society

The program for the meeting of the Society on October 5th was a "Symposium on Exploratory Surgery". The participants and the subjects discussed were: Dr. Frances H. Cole, "Chest"; Dr. W. H. Walker, "Kidney"; Dr. George R. Livermore, Jr., "Abdomen". The papers were discussed by Drs. James D. Hardy, Sam Raines, and Battle Malone, III.

Knoxville Academy of Medicine

On November 9th, the Society held its Annual Meeting for election of Officers. The scientific program was presented by Dr. Victor H. Klein, Jr. and his subject was "Treatment of Acute Cholecystitis". His paper was discussed by Dr. James Ely and Dr. Charles Zirkle.

Chattanooga and Hamilton County Medical Society

"Traumatic Surgery" was the subject discussed at the November 4th meeting. Taking part in the program were Drs. Gene H. Kistler, Moderator, George G. Young, Paul C. Thompson, Robert A. Waters, and Frank B. Graham.

The Society held its first Medical-Legal Clinic on October 21st. The Clinic was jointly sponsored by the Society and the Chattanooga Bar Association. Assisting in arrangements was Attorney John Gaither and Dr. Edward T. Newell, Jr., Chairman of the Legal Liaison Committee of the Tennessee State Medical Association. Two-hundred doctors and lawyers in the Chattanooga area attended. The purpose of the Medical-Legal Clinic was to "discuss mutual problems arising from personal injury claims and to render a better service to

the public through a better understanding on the part of each profession, of the problems of the other". Dr. Gene Kistler spoke on "The Medical Witness"; Dr. Houston Price discussed "Medical Investigation and Preparation for Trial"; Dr. George Shelton spoke on "Back Injuries"; Dr. Wm. Sheridan discussed "Traumatic Neurosis and the Malingeringer". Dr. W. E. Van Order presided at the meeting along with Mr. John E. Carriger, President of the Chattanooga Bar Association.

Nashville Academy of Medicine and Davidson County Medical Society

A dinner was held in the Vanderbilt University Hospital Cafeteria on November 9th followed by the Society meeting. The Society selected its nominees for officers for 1955. The scientific program was presented by Dr. H. William Scott, Jr., who discussed "Recent Advances in Surgery".

Qualified Negro doctors were made eligible to apply for membership in the Nashville Academy of Medicine and Davidson County Medical Society when the organization amended its constitution and by-laws. The amendment followed recommendation by the board of directors in September that the academy consider making Negro physicians eligible to apply for membership. If granted by the board and the Academy, membership would automatically include membership in the Tennessee State Medical Association.

Consolidated Medical Assembly

The program on November 2nd consisted of a Medico-Legal Clinic sponsored jointly by the Society and the Jackson-Madison County Bar Association. One hundred, seventy-five lawyers and doctors attended. Two doctors and two lawyers presented phases of the fundamental aim of the clinic: to clarify for both professions the duties each owes its patient or client who may be involved in any way in a legal situation. Dr. Hugh Smith of Memphis and Drs. Baker Hubbard, Carmack Murchison and Homer Waldrop, all of Jackson discussed the fields of the medical witness, medical investigation and preparation of testimony. Dr.

Donald A. Johnson of Memphis gave a technical discussion of the evaluation of back injuries. Dr. George D. Dodson of Jackson outlined recognition and treatment of neurosis and the malingeringer.

The presiding officers were Mr. Wm. P. Moss, President of the Jackson-Madison County Bar Association and Dr. John Armstrong of Somerville, President of the Consolidated Medical Assembly.

Roane County Medical Society

The Society met on November 30 at the Oak Ridge Hospital. Dr. Howell Sherrod of Johnson City spoke on "Amputations and Prostheses".

Madison County Medical Society

A meeting was held on October 26 at Mars Hill. Dr. E. P. Muncy of Jefferson City was the speaker.

MEDICAL NEWS IN TENNESSEE

Vanderbilt University School of Medicine

The Pediatric Department announces a Postgraduate Seminar on Thursday February 17, 1955. In a series of "wet clinic" demonstrations of sick and well children all of the recent advances in pediatrics will be discussed.

Technical procedures will also be demonstrated. A \$5.00 registration fee will be charged to cover expenses of mailing, mimeographing and for a buffet luncheon which will be served in the Hospital Dining Room. Five hours credit have been certified by the Academy of General practice.

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Dr. Richard O. Cannon, Director of Vanderbilt University Hospital, has returned to his post after a two-year leave of absence for service in the Army.

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The following faculty appointments have been made: Dr. G. W. Bounds as Assistant in Clinical Ophthalmology; Dr. L. G. Schull as Instructor in Pharmacology; Dr. Sarah H. Sell as Instructor in Pediatrics.

Dr. R. W. Adams, Jr., Instructor in Psychiatry, and Dr. A. Brant Lipscomb, Instructor in Clinical Surgery, have returned after leaves of absence.



University of Tennessee College of Medicine

The National Institute of Mental Health of the U. S. Public Health Service has awarded \$16,926 to the School of Nursing to provide advance instruction in psychiatric nursing. The grant provides for the facilities and personnel, in addition to stipends for the graduate nurses who enroll in the 1-year program.



For the second year, with 750 students enrolled, the college is the largest medical school in the United States. The University of Michigan with an enrollment of 728 students is second, and the University of Illinois is third with 667 students.



Medico-Legal Institute

Some 250 doctors and lawyers, met the Moot Courtroom at the Law College in Knoxville as the Medico-legal institute opened. The Institute was jointly sponsored by the U.T. College of Law, the Knoxville Academy of Medicine and the Knoxville Bar Association. Conducting the medical lectures at the Institute were the following doctors: Victor H. Klein, Jr., Wade H. Boswell, George G. Henson, W. Eidson Smith, James L. Southworth, Clifford L. Walton, C. Sanford Carlson, Robert B. Higgins, Harry H. Jenkins, H. O. Bourkard, Jr., W. F. Gallivan, Robert F. Patterson, Jr., Walter J. Lee and Robert W. Newman.

Moderators for the two-day meeting included Dr. Roy L. McDonald, public relations chairman of the Knoxville Academy of Medicine; Dr. John E. Kesterson and Mr. Taylor Cox, President of the Knoxville Bar Association. The Institute was conducted on November 11th and 12th.



Volunteer Help to Handicapped

"Obligation Memphis," a community-wide volunteer movement to help rehabilitate the handicapped, is seeking support for a

comprehensive rehabilitation center located in Memphis. "The Hill-Burton Hospital Construction Act provides funds of 1 million dollars to be given Tennessee over a three-year period for the use in construction of comprehensive rehabilitation centers," said Arvie P. Mills, Volunteer Movements Executive Secretary. He further stated that "A comprehensive rehabilitation center is needed to close the gap in our medical services provided through a medical center, which now serves the entire Mid-South. All of the specialists to be included in such a center are now available in some degree in Memphis, but there is no means of co-ordinating the services other than through a comprehensive center. The center will provide the shortest route for the disabled from the bed to productive employment, the secretary stated.



The American Society of Tropical Medicine and Hygiene, The American Society of Parasitologists and The American Academy of Tropical Medicine

Five hundred members to these societies met in their annual session in Memphis, November 3-6. A total of 184 scientific papers were on the program. Two awards for research and achievement in tropical medicine were presented. Hosts to the visiting specialists were the School of Biological Sciences and the College of Medicine of the University of Tennessee, The Memphis-Shelby County Medical Society and the Memphis Academy of Internal Medicine.



Middle Tennessee Medical Association

The 120th Semi-annual meeting of the Association was held on November 18 at Gallatin, Tennessee. Dr. J. B. Black, President, presided at the session. The program consisted of the following: "Cutaneous Manifestations of Internal Disease" by Dr. Bernard Pass, Nashville; "Rush Intermedullary Nails" by Dr. John R. Glover, Nashville; "Pruritus Ani" by Dr. Charles K. Rath, Murfreesboro; "Symposium—Lower Abdominal Pain" by Drs. Robert Chalfant, J. L. Farringer and Arthur Anderson, Nashville; "Coronary Artery Insufficiency" by

Dr. Howard Foreman, Nashville; "Obstetrical Anesthesia" by Drs. James W. Ellis and Lawrence Schull, Nashville; and "Chemotherapy of Tuberculosis" by Dr. Ira Johnson of Nashville. Dr. Frank G. Witherspoon, Nashville, was named President-Elect; and Dr. Oscar Carter, Nashville, is the new Secretary-Treasurer.

PERSONAL NEWS

Dr. H. M. McGuire and Dr. Houston Lowry, Madisonville physicians, are constructing new buildings in which they will operate clinics.

Dr. H. C. Capps, Waverly, is the medical officer at Paducah, Kentucky for the Tennessee Valley Authority.

Dr. H. P. Whittle, Etowah, has announced as a candidate for a Member of the Board of Education.

Dr. W. W. Knowles, Jr. has opened an office for the practice of medicine at Smithville.

Doctors Gibson and Bottomley, Greeneville, have purchased the Campbell Hospital at Tusculum, which will now be known as the Tusculum Clinic.

Drs. Rollin Daniel, Benjamin Robbins, S. B. Fowler, L. W. Edwards, W. C. Dixon, Louis Rosenfield, and N. S. Shofner, Nashville physicians recently participated in a Public Health Forum.

Dr. J. C. Gaw has opened an office for the practice of medicine in McMinnville.

Dr. Augustus McCravey recently presented a paper at the American Academy of Neurological Surgery.

Drs. J. G. Hufstедler, Mallory Harwell, Charles L. Clarke, Charles B. Olin, Phil E. Orpet, Jr. and J. B. Witherington were recent participants in a Medical Forum in Memphis.

Drs. William A. Garrett, Everett K. Ferguson, Marvin R. Batchelor, S. J. Sullivan and Carl T. Speck, Cleveland, recently participated in a Health Forum presented by the Bradley County Medical Society.

At a 2nd Health Forum in Cleveland, **Drs. John Paul Carter, S. J. Sullivan, Wm. T. Profit, W. C. Stanbery, Charles Heron and Joseph McCoin**, participated.

Dr. Gilbert Varnell, has opened an office for the practice of medicine at Cleveland.

Dr. Raymond Carter Haley, Jr., has opened the Soddy Clinic in Soddy.

Dr. Ralph R. Braund, Memphis, has been elected President of the Tennessee Division of the American Cancer Society.

Dr. Eugene Epstein, Memphis, has recently opened a new clinic.

Dr. Allen S. Edmonson is now connected with **Dr. Oscar McCallum** at Henderson.

Memphis physicians participating recently in a Medical Forum were **Drs. Ben Pentecost, Marcus**

J. Stewart, Richard DeSaussure, Daniel A. Brody, Howard Boone and Charles G. Robinson.

Dr. B. H. Webster, Nashville, has been appointed Chairman of the Educational Division of the Muscular Dystrophy Association.

Dr. George W. Burchfield, Maryville, has been honored with a dinner by the Blount County Medical Society.

At a Public Forum in Memphis the following physicians participated—**Drs. Duane M. Carr, Sam C. Carter, Max Hughes, Francis H. Cole, and John D. Young.** The Forum was on "Modern Treatment of Diseases of the Lungs".

Dr. Fred Overton, Nashville, recently addressed the monthly meeting of the Licensed Practical Nurses Association.

Dr. Fred M. Friedman, has opened a clinic for the practice of medicine in Jackson.

Dr. Ralph B. Moore, McMinnville, spoke before the Seventh-Day Adventist Church recently.

Dr. Clarence Landham, Chattanooga, has been elected President of the Tennessee Council for Retarded Children.

Dr. James D. Miller, Bristol, has been elected President of the Upper East Tennessee Workshop for the Blind.

Dr. Warren Kimsey, Chattanooga, has opened an office for the practice of neurological surgery.

Dr. Bland W. Cannon of Memphis has been elected Vice-President of the Congress of Neurological Surgeons.

Dr. William Ewers has opened his office for the practice of internal medicine in Nashville.

Dr. George W. Bounds, Jr., announces the opening of his office for the practice of ophthalmology in Nashville.

Dr. Arthur Anderson announces the opening of his office for the practice of internal medicine in Nashville.

Dr. Irwin B. Eskind, Nashville, is opening his office for the practice of internal medicine.

BOOK REVIEW

The Physician and His Practice. Edited by **Joseph Garland, M.D.** Boston, Mass.: Little, Brown and Company. 1954. 270 pages. Price \$5.00.

In this volume the Editor of *The New England Journal of Medicine* has had prepared eighteen essays on varying aspects of medical practice. The essayists include a dean and several teachers of medicine, a general practitioner, past president of the Academy of General Practice, President of the A.M.A. members of the bar, past president of the Women's Auxiliary of a state medical association and representatives of business or management.

It may be guessed that here is a collection of essays which direct attention to the many facets of the practice of medicine. This is a book which will make interesting reading to the young man

on the threshold of beginning his life's work, now that he has completed or is nearing completion of his internship or residency or military service. He may learn what paths of activity have been opened to him by his medical training. He may learn what his relationship may be to hospitals, the community and to medical societies. He may read something relative to the business aspects of medicine as well as to the legal ones. Certain portions of the book will be of especial interest to the young practitioner's wife.

The reviewer suggests that this book would be a most acceptable Christmas gift to the young doctor who is to begin his practice in the coming months.

R. H. K.

ANNOUNCEMENTS

Announcing 10th Rural Health Meeting

The A.M.A.'s 10th National Rural Health Conference will be held on February 24-26 at the Schroeder hotel, Milwaukee, Wisconsin. Theme will be "Looking Both Ways" at such problems as accident prevention and family responsibility in health affairs.

A special pre-conference session for members of the medical profession will be held on February 24. Discussions will be on the work of medical society rural health committees, responsibilities of citizenship and training for rural practice.

American Academy of Forensic Sciences

The Seventh Annual Meeting of the American

Academy of Forensic Sciences will be held in the Biltmore Hotel in Los Angeles on February 17, 18, 19, 1955. The Law Department of the American Medical Association has long urged that the profession take an increasing interest in medicolegal problems and the programs of the Academy meetings are a definite step in that direction. Further information may be obtained by writing Dr. W. J. R. Camp, University of Illinois College of Medicine, 1853 W. Polk Street, Chicago, Ill.

Safeguarding the Workers Health

Building an effective health program for American industry utilizing the facilities of medicine, government, management and labor will be emphasized at the 15th annual Congress on Industrial Health. Sponsored by AMA's Council on Industrial Health, the Congress will be held January 25 and 26 at the Shoreham hotel, Washington, D. C.

Following the general theme—"Goals of Preventive Medicine"—panel discussions will be presented on: (1) Industrial health as a major component in community health; (2) Training and recruitment of qualified professional personnel; (3) Medical care plans; (4) Workmen's compensation and rehabilitation, and (5) Health in the atomic age, stressing the need for modern protective methods of safeguarding the worker's health.

A pre-conference session for medical society committee members will be held January 24 to consider problems of special interest to the medical profession.

1954 MEMBERS OF TENNESSEE STATE MEDICAL ASSOCIATION

The list of members of the Tennessee State Medical Association is published in compliance with a provision of the Constitution and By-Laws. The data are accurate as of December 10, 1954. They are arranged in the following order:

List of active members.

Counties arranged alphabetically.

ANDERSON COUNTY
Clinton
A. W. Bishop
J. S. Hall
Henry Hedden
John J. Smith
Nathan B. Williams
(Mem. Roane Co. Soc.)
Lake City
J. M. Cox
R. B. Scott
Norris
S. G. McNecley
BEDFORD COUNTY
Shelbyville
W. H. Avery
James N. Burch
W. L. Chambers
A. L. Cooper
Alfred Farrar
Taylor Farrar
Grace Moulder
T. R. Ray
Carl Rogers
Sara Womack
BENTON COUNTY
Camden
J. Mansfield Bailey
(Mbr. Humphreys Co.)
A. T. Hicks
R. L. Horton
BLED SOE COUNTY
Pikeville
Thomas G. Cranwell
(Mbr. Hamilton Co.)
BLOUNT COUNTY
Maryville
Oliver K. Agee
J. H. Bowen
K. A. Bryant
Geo. W. Burchfield
Henry A. Callaway
Lea Callaway
M. A. Carnes
Mary D. Cragan
W. C. Crowder
Lynn F. Curtis
W. N. Dawson
R. H. Haralson
J. S. Henry
H. L. Isbell
E. P. Kintner
Beulah Kittrell
Samuel S. Lambeth
Ray Laughmiller
Julian C. Lentz
C. B. Lequire
F. S. Lovinwood
J. M. McCulloch
J. F. Manning
Jack Phelan
James N. Proffitt
B. P. Ramsey
Trent Vandergriff
Lowell E. Vinsant
John Yarbrough
BRADLEY COUNTY
Cleveland
D. N. Arnold
*In Service

Wesley A. Barton
W. B. Campbell
E. R. Ferguson
Wm. A. Garrett
C. S. Heron
J. C. Lowe
Joseph McCoin
Wm. I. Proffitt
Wm. R. Smith
C. T. Speck, Jr.
W. C. Stanberry
S. J. Sullivan
Claud H. Taylor
Madison S. Trewitt
CAMPBELL COUNTY
Caryville
Chas. Rogers
Jellico
C. E. Ausmus
Robert L. Brown
Charles A. Prater
Ned C. Watts
La Follette
M. L. Davis
P. T. Howard
P. J. O'Brien
J. W. Presley
John C. Pryse
R. C. Pryse
James W. Riggs
L. J. Seargeant
CANNON COUNTY
Woodbury
William A. Bryant
(Mbr. Rutherford Co.)
Russell E. Meyers
(Mbr. Rutherford Co.)
CARROLL COUNTY
Bruceton
R. T. Keeton
L. E. Trevathan
Huntingdon
R. A. Douglas
B. L. Holladay
R. B. Wilson
McKenzie
E. E. Edwards, Jr.
J. T. Holmes
Trezevant
James E. Moseley
James H. Robertson
CARTER COUNTY
Elizabethton
R. J. Allen
Chas. B. Baughman
E. L. Caudill, Sr.
E. L. Caudill, Jr.
W. G. Frost
John A. Knapp
E. T. Pearson
Dillard M. Sholes
CHEATHAM COUNTY
Ashland City
J. P. Glover, Jr.
CHESTER COUNTY
Henderson
W. O. Baird
*H. D. Farthing
Ernest P. Guy
O. M. McCallum
Hunter M. Steadman
J. B. Stephens

CLAIBORNE COUNTY
New Tazewell
H. C. Evans
(Mbr. Knox Co.)
George L. Rea
(Mbr. Knox Co.)
CLAY COUNTY
Celina
Champ E. Clark
(Mbr. Overton Co.)
COCKE COUNTY
Newport
W. E. McGaha
Drew A. Mims
L. S. Nease
Wm. B. Robinson
W. C. Ruble, Jr.
Glen C. Shults
Fred M. Valentine
COFFEE COUNTY
Manchester
Clarence H. Farrar
Howard A. Farrar
Coulter S. Young
Tullahoma
R. L. Brickell
Jack T. Farrar
B. E. Galbraith
J. M. King
C. C. Snoddy
Bryant S. Swindoll
James B. Zickler
CROCKETT COUNTY
Alamo
E. O. Prather, Jr.
Bells
E. Farrow
F. P. Hess
Charles N. Hickman
S. E. McDonald
R. W. Mayfield
William R. Sullivan
CUMBERLAND COUNTY
Crossville
Paul A. Erwin, Jr.
Wm. E. Evans
Edward Hollenberg
Donathan Ivey
H. F. Lawson
Robert M. Metcalfe
Alfred M. Taylor
M. M. Young
Pleasant Hill
Margaret K. Stewart
May Wharton
DAVIDSON COUNTY
Donelson
E. E. Anderson
Luther A. Beazley
Robert B. Gaston
C. N. Gessler
H. P. Hyder
Luther E. Smith
Goodlettsville
Roy R. Bowes
R. L. Whittaker
Madison
Frederic B. Cothren
Joe E. Sutherland
Harry Wittzum

Madison College
Julian C. Gant
George E. Horsley
Margaret E. Horsley
David F. Johnson
Gilbert H. Johnson
Cyrus E. Kendall
Naomi K. Pitman
James D. Schuler
Nashville
Walter M. Adair
Crawford Adams
J. W. Alford, Jr.
Clyde Alley
W. L. Alsbrook
Arthur R. Anderson
Edwin B. Anderson
H. R. Anderson
James P. Anderson
Joe D. Anderson
J. J. Ashby
G. F. Aycock
Sidney W. Ballard
Preston H. Bandy
Edwin H. Barksdale
Randolph Batson
David S. Bayer
Eric Bell, Jr.
Lynch Bennett
Edmund W. Benz
Stanley Bernard
Robert C. Berson
John H. Beveridge
Otto Billig
F. T. Billings, Jr.
Geo. T. Binkley, Jr.
Russell Birmingham
Lindsay K. Bishop
Thomas M. Blake
James B. Boddie, Jr.
Anna M. Bowie
John M. Boylin
H. B. Brackin
H. B. Brackin, Jr.
Clove F. Bradley
G. Hearn Bradley
T. F. Bridges
M. F. Brown
(Mbr. Lincoln Co.)
J. Thomas Bryan
John C. Burch
Joseph G. Burd
R. N. Buchanan, Jr.
Roger B. Burrus
B. F. Byrd
B. F. Byrd, Jr.
James I. Callaway
Richard O. Cannon
William J. Card
George K. Carpenter
Oscar W. Carter
Norman M. Cassell
W. R. Cate
W. R. Cate, Jr.
John S. Cayce
Lee F. Cayce
Robert L. Chalfant
Amos Christie
Everett M. Clayton, Jr.
Cully A. Cobb, Jr.
Richard C. Cole
W. J. Core
Orrie A. Couch, Jr.
Sam C. Cowan, Jr.
Frederic E. Cowden
Geo. Boyd Crafton
R. R. Crowe
Rollin A. Daniel, Jr.
*Philip V. Daugherty
T. W. Davis
Wm. A. Demonbreun
Walter L. Dively
Earl D. Dorris
Beverly Douglas
H. L. Douglass
L. Rowe Driver
Ray L. Dubuison
Price Duff
R. S. Duke
George Duncan
Herbert Duncan

James W. Ellis
L. W. Edwards
Phillip C. Elliott
Harry M. Estes
E. Wm. Ewers
Don L. Eyler
John L. Farringer
W. F. Fessey
R. O. Fessey
Robert M. Finks
Robert M. Foote
Howard R. Foreman
Garth E. Fort
S. Benjamin Fowler
Richard France
Herbert C. Francis
John W. Frazier, Jr.
Thomas Fern Frist
James L. Fuqua
Robert K. Galloway
Chas. K. Gardner
J. C. Gardner
Sam Y. Garrett
(Mbr. Smith Co.)
R. S. Gass
(Mbr. Williamson Co.)
Hamilton V. Gayden
Horace C. Gayden
John R. Glover, Sr.
James Goldsberry
Robt. A. Goodwin
E. W. Goodpasture
David K. Gotwald
Geo. T. Graves, Jr.
John W. Griffith, Jr.
Thomas Grizzard
Laurence A. Grossman
Milton Grossman
Wm. E. Gupton, Jr.
Roy G. Hammonds
David W. Hailey
Chas. E. Haines
Thos. B. Haltom
C. M. Hamilton
Edward C. Hamilton
W. M. Hamilton
Robt. C. Hartmann
A. B. Harwell
Fred R. Haselton
O. S. Hawk
James T. Hayes
*J. H. Head, D.D.S.
J. L. Herrington
John G. Herzfeld
J. B. Hibbitts, Jr.
William Higginson
Elmore Hill, D.M.D.
I. R. Hillard
John W. Hillman
R. H. Hirsch
J. Harvill Hite
Geo. W. Holcomb
Jr.
A. N. Hollabaugh, Jr.
Chas. F. Hollabaugh
Frank R. Holter
Wm. A. Horan
W. W. Hubbard
Granville W. Hudson
Vernon Hutton, Jr.
M. D. Ingram
J. McK. Ivie
John A. Jarrell, Jr.
D. I. Johns
Hollis E. Johnson
Ira T. Johnson
Edmund P. Jones
T. M. Jordan
R. H. Kampmeier
A. E. Keller
J. Allen Kennedy
Wm. G. Kennon, Jr.
Carl T. Kirchmaier
J. A. Kirtley, Jr.
Leonard J. Koehnig
Roland D. Lamb
R. K. Landis
Leon M. Lanier
Ralph M. Larsen
Horace T. Lavery, Jr.
W. P. Law
G. Allen Lawrence
John M. Lee
John J. Lentz
Elias A. Lessem
Jas. D. Lester
Milton S. Lewis
Richard C. Light
Rudolph Light
John P. Lindsay
A. B. Lipscomb
L. S. Love
(Mbr. Putnam Co.)
Jackson P. Lowe
S. L. Lowenstein
Frank H. Lutton
Philip L. Lyle
Robt. H. Magruder
Guy Milford Maness
W. R. Manlove
Edw. H. Martin, D.D.S.
Travis H. Martin
Jas. Andrew Mayer
Ben R. Mayes
G. S. McClellan
C. C. McClure
C. C. McClure, Jr.
Robt. L. McCracken
C. S. McMurray
Barton McSwain
Wm. F. Meacham
Arnold M. Meirowski
Cleo M. Miller
Lloyd C. Miller
Harry T. Moore, Jr.
John F. Moore
Theodore Morford
Hugh J. Morgan
N. B. Morris
P. G. Morrissey, Jr.
M. K. Moulder
Oscar G. Nelson
E. V. Newman
Oscar F. Noel
D. Douglass Odell
O. A. Oliver, D.D.S.
Wm. F. Orr, Jr.
James C. Overall
Fred W. T. Overton
Homer M. Pace
*Roy Wm. Parker
Bernard Pass
R. C. Patterson, Jr.
Edna S. Pennington
George L. Perler
M. A. Petrone
*David Pickens, Jr.
Bruce P. Pool
Samuel B. Prevost
Chas. C. Randall
James Scay Read
E. M. Regen
John R. Rice
*S. R. Reichman
Greer Ricketson
Douglas H. Riddell
H. P. Rieger
Elkin L. Rippey
S. S. Riven
Ben H. Robbins
Joseph D. Robertson
Miller Robinson
Dan C. Roehm
Louis Rosenfeld
P. M. Ross
Sam T. Ross
Dan Sanders, Jr.
Houston Sarraff
J. H. Savers, Jr.
Lawrence G. Schull
Herbert J. Schulman
H. Wm. Scott
A. B. Scoville, Jr.
George F. Seeman, D.D.S.
D. C. Seward
John L. Shapiro
Harry S. Shelley

Towns in each county arranged alphabetically and the members in each town arranged alphabetically.

List of members residing outside the state arranged alphabetically.

List of veteran members.

List of members who have died in the year 1954.

- N. S. Shofner
H. H. Shoulders
H. H. Shoulders, Jr.
H. S. Shoulders
Harrison J. Shull
Annie T. Sikes
T. E. Simpkins
Daugh W. Smith
Henry C. Smith
Bertram Sprockin
Frank W. Stevens
Hugh L. C. Stevens
Joe M. Strayhorn
W. D. Strayhorn
Richard C. Stuntz
Robt. E. Sullivan
Wm. D. Sumpter, Jr.
Arthur J. Sutherland
Richard P. Taber
Wm. H. Tanksley
Edw. L. Tarpley
Panline Tenzel
Robert T. Terry
A. B. Thach, Jr.
C. S. Thomas
John B. Thomison
N. Thomasson
W. O. Tirrell, Jr.
Kirkland W. Todd, Jr.
C. C. Trabue, IV
C. B. Tucker
Carlin G. Tucker
John M. Tudor
J. J. Vaughn, D.D.S.
Wm. O. Vaughan
Ethel Walker
James W. Ward
Russell D. Ward
Thomas F. Warder
Paul L. Warner
R. J. Warner
Thomas S. Weaver
B. H. Webster
Albert Weinstein
Bernard Weinstein
Frank E. Whitacre
Joe T. Whitfield
P. D. Widdis
(Mbr. Dyer, Lake and Crockett)
W. W. Wilkerson, Jr.
Earl E. Wilkinson
Claihorne Williams
Edwin L. Williams
W. Garter Williams
(Mbr. Smith Co.)
Frank G. Witherspoon
Jack Witherspoon
Frank C. Womack
W. T. Woodard
(Mbr. Washington, Garter & Unicoi)
C. C. Woodcock
M. C. Woodfin
T. Volney Woodring
John R. Woods
John L. Wyatt
R. F. Wyatt
John B. Youmans
T. Hugh Young
Kate Savage Zerfoss
Thomas B. Zerfoss
Thos. B. Zerfoss, Jr.
- Old Hickory*
T. D. Dailey
E. P. Johnson
James K. Lawrence
R. P. Miller
E. B. Rhea
W. W. Wilson
- DECATUR COUNTY**
Parsons
H. L. Conger
- DEKALB COUNTY**
Alexandria
Odell Mason
(Mbr. Smith Co.)
- DICKSON COUNTY**
Charlotte
Mary Baxter Cook
*James C. Elliott
*In Service
- Dickson*
R. P. Beasley
W. A. Bell, Jr.
*W. A. Crosby
J. T. Jackson
Lawrence C. Jackson
W. M. Jackson
- DYER COUNTY**
Dyersburg
W. E. Anderson
I. Paul Baid
Thos. V. Banks
C. R. Bishop
James W. Bonds
Percy A. Conyers
Thomas W. Johnson
Robert T. Kerr
O. B. Landrum
*Joe Moody
J. B. Moody
J. C. Moore
I. H. Nunn
I. G. Price
R. David Taylor
W. L. Thornton, Jr.
Lydia V. Watson
- Newbern*
J. B. Fuller
Wm. L. Phillips
I. C. Smith
- FAYETTE COUNTY**
Oakland
L. D. McAuley
Rossville
F. K. West
Somerville
John L. Armstrong
Frank S. McKnight
John W. Morris
Wm. F. Outlan
Lee Rush, Jr.
- FENTRESS COUNTY**
Jamestown
R. E. Craven
R. G. Cravens
Guy C. Pinckley
I. Peery Sloan
- FRANKLIN COUNTY**
Cowan
James Van Blaricum
Decherd
P. J. Flippin
Huntland
L. J. Stubblefield
(Mbr. Lincoln Co.)
Sewanee
Ruth Cameron
Charles B. Keppeler
E. W. Kirby-Smith
H. T. Kirby-Smith
- Winchester*
Jo C. Anderton
Reynolds Fite
George L. Smith
- GIBSON COUNTY**
Dyer
F. Douglass
Humboldt
H. G. Barker
Chas. W. Davis
A. H. Fick
J. W. Ousler
Jas. D. Rozzell
George E. Spangler
- Medina*
Robt. Morris
Milan
Geo. T. Burckett
- H. P. Clemmer
James O. Fields
R. F. Hughes
F. L. Keil
W. H. Stallings
- Rutherford*
W. F. Bell
- Trenton*
*Edw. C. Barker
E. C. Crafton
James W. Hall
M. D. Ingram
W. C. McRee
- GILES COUNTY**
Bethel
L. A. Edmondson
Pulaski
Robert B. Agee
J. H. Hite, Jr.
I. B. Hulme
W. J. Johnson
K. M. Kressenburgh
Wm. A. Lewis
Roy W. Money
W. K. Owen
I. U. Speer
D. M. Spotwood
- GRAINGER COUNTY**
Rutledge
L. C. Bryan
(Mbr. Knox Co.)
Washburn
Robt. J. Phlegar
(Mbr. Knox Co.)
- GREENE COUNTY**
Greeneville
V. R. Bottomley
Robert Brown
L. E. Coolidge
R. S. Cowles, Sr.
*Robt. S. Cowles, Jr.
N. H. Crews
L. E. Dyer
*G. C. Ekvall
Luke L. Ellenburg
Haskell W. Fox
R. B. Gibson
J. G. Hawkins
Hal Henaud
N. P. Horner
Robert Keeling
C. B. Laughlin
Haskell McCollum
W. Lewis McGuffin
R. W. McMullen
- Mosheim*
Dale Brown
- GRUNDY COUNTY**
Coalmont
L. F. Littell
(Mbr. White, Warren, Van Buren Co.)
- HAMBLETON COUNTY**
Morristown
Howard T. Brock
John D. Caldwell
J. K. Cooper
C. J. Doby
G. I. Hislop
Y. Alvin Jackson
John Kinser
F. J. Little, Jr.
E. Gene Lynch
Harold B. Marble
Cecil F. Mynatt, Jr.
(Mbr. Sullivan-Johnson)
L. W. Nabers
F. F. Painter
John L. Pearce
R. A. Purvis
J. W. Richardson
*Powell Trusler
D. J. Zimmermann
- HAMILTON COUNTY**
Chattanooga
Chester Adams
John W. Adams
C. H. Alper
E. R. Anderson
Harry S. Anderson
J. J. Armstrong
I. L. Arnold
Merton Baker
Robert E. Baldwin
C. H. Barnwell
H. B. Barnwell
S. H. Barrett
W. R. Bishop
Robert J. Boehm
Walter E. Boehm
F. B. Bogart
J. W. Bradley
Frank S. Brannen
A. F. Branton
J. C. Brooks, Jr.
L. P. Brooks
James Y. Bryson
Arch Bullard
E. F. Buchner, Jr.
Vernon Burkhardt
W. R. Buttram
W. R. Buttram, Jr.
John R. Cain
Earl R. Campbell
Maurice A. Canon
E. E. Carrier
John P. Carter
Douglas Chamberlain
Cleo Chastain
O. H. Clements
George E. Cox
John M. Crowell
Tolbert C. Crowell
Doyle E. Currey
J. Tom Currey
T. H. Curtis
O. M. Derryberry
Robt. G. Demos
James F. Dietrich
Paul H. Dietrich
Richard B. Donaldson
Albert S. Easley
A. F. Ebert
Robt. E. Evssen
J. R. Fancher
E. Marlin Fitts
Richard Van Fletcher
A. C. Ford
Shelton F. Fowler
Guy M. Francis
J. E. Frazier
J. Marsh Freere
*J. Marsh Freere, Jr.
O. C. Gass
G. C. Gibson
Robt. H. Giles, Jr.
E. Wayne Gilley
Dean W. Golley
Paul M. Golley
Kenneth M. Gould
Frank Graham
Joseph W. Graves
F. Russell Hackney
Alton G. Hair
R. J. Hall
L. L. Hamilton
Foster Hampton, Jr.
Frank F. Harris
E. F. Harrison
Lewis B. Haidison
Carl A. Hartung
Chas. W. Hawkins
Robt. S. Hellman
Raymond D. Henderson
H. B. Henning
George Henshall
Homer D. Hickey
John M. Higginbotham
J. M. Higginbotham
J. F. Hobbs
John W. Hocker
Richard G. Hofmeister
J. M. Chesney
Hoghead
Pope B. Holiday, Jr.
C. M. Hooper
*Rudolph Hoppe
Don R. Hornsby
Joseph Lavecchia
W. P. Hutcherson
D. Isbell
- DeWitt B. James
Harry Jones
Edward G. Johnson
Edward Lewis Johnson
Franklin Johnson
Joseph Johnson, Jr.
J. E. Johnson
J. Paul Johnson
D. B. Karr
Walter P. Keith
Joe B. Killebrew
John J. Killeffer
John E. Kimball, Jr.
Clyde R. Kirk
Gene H. Kistler
Rudolph M. Landry
M. F. Langston
H. P. Larimore
Chester L. Lassiter
Hiram A. Laws, Jr.
Stewart Lawwill
Stewart Lawwill, Jr.
Philip H. Livingston
H. D. Long
Ira M. Long
S. H. Long
Thomas S. Long
Hugh B. Magill, Jr.
T. J. Manson
S. S. Marchbanks
Fred E. Marsh
M. A. Meacham
William MacGuire
H. J. McAlister
Cooper H. McCall
David McCallie
Augustus McCravy
Preston C. McDow
George R. McElroy
J. B. McGee
J. Edward McKinney
J. D. L. McPheeters
H. C. Miles
Robert T. Miller
*George A. Mitchell
Fay B. Murphy
Oscar B. Murray
Robt. W. Myers
Marvin Nathan
Merrill F. Nelson
Cecil E. Newell
E. T. Newell
E. T. Newell, Jr.
Chas. H. Paine, Jr.
A. M. Patterson
R. L. Patterson
E. White Patton
J. B. Phillips
Robert J. Pitner
W. Houston Price
Maurice Pruitt
Maurice Rawlings
Chas. W. Reavis
W. D. L. Record
E. E. Reisman, Jr.
Edward E. Reisman, Sr.
Herman Renner
Gilbert M. Roberts
G. Madison Roberts
Robert C. Robertson
H. A. Schwartz
Clarence Shaw
George Shelton
W. J. Sheridan
John N. Shipp
V. F. Shull
Leopold Shumacker
*George Sivils
Moore J. Smith, Jr.
Stewart P. Smith
Philip C. Sottong
Richard F. Stappenbeck
Eleanor Stafford
Harold Starr
John B. Steele
Willard Steele
Willard H. Steele, Jr.
William A. Stem
Wm. G. Stephenson
J. E. Strickland, Jr.
Harry A. Stone
Wesley Stoneburner
David J. Stump
Charles L. Suggs, Jr.
J. B. Swafford
Bernard Tepper
Jack Tepper
Marjorie O. Tepper
Chas. Roberts
Thomas
Paul C. Thompson
- Robt. C. Thompson
A. S. Ulin
Louis Ulin
Roy B. Van Allen
Minnie Vance
Gus J. Vlasis
O. L. Von Canon
Arthur J. Von Wersowetz
Robert A. Waters
L. Spires Whitaker
G. Victor Williams
S. H. Wood
James C. Wright
George G. Young
Roy O. Young
Guy Zimmerman
- Daisy*
Wm. P. Aiken
Hixon
Wm. P. Aiken
C. A. Clements
Ooltewah
Eugene M. Ryan
Soddy
E. L. Jenkins
- HARDEMAN COUNTY**
Bolivar
E. L. Baker
D. L. Brint
W. E. Lawrence
B. F. McNulty
J. Knox Tate
Grand Junction
L. D. Pope
Whiteville
P. M. Bishop
Aubrey Richards
- HARDIN COUNTY**
Savannah
H. D. Blankenship, Jr.
J. W. Carroll
R. B. Deberry
O. C. Doty
Howard W. Whitaker
Otis Whitlow
- HAWKINS COUNTY**
Church Hill
Warren L. Clark
(Mbr. Sullivan-Johnson Cos.)
Rogersville
Edw. M. Henderson
(Mbr. Sullivan-Johnson Co.)
- HAYWOOD COUNTY**
Brownsville
T. C. Chapman
H. L. Gilliland
W. D. Poston
Glenn T. Scott
David E. Stewart
John Thornton, Jr.
J. K. Welch, Jr.
- HENDERSON COUNTY**
Lexington
R. M. Conger
C. J. Huntsman
W. C. Ramer
- HENRY COUNTY**
Paris
Arthur Dunlap
R. Graham Fish
I. H. Jones

Ambrose M. Lanza
J. H. McSwain
E. P. Mobley, Jr.
John E. Neumann
E. B. Paschall
W. R. Peebles
(Mbr. Consolidated Co.)
W. G. Rhea
J. Ray Smith
Henriette Veltman
C. D. Wilder

HICKMAN COUNTY

Centerville

Parker D. Elrod
(Mbr. Davidson Co.)
Ogle Jones
(Mbr. Davidson Co.)

HOUSTON COUNTY

Erin

O. H. Atkins
(Mbr. Montgomery Co.)
Troy Walker
(Mbr. Montgomery Co.)

HUMPHREYS COUNTY

Waverly

James T. Allen
J. C. Armstrong
Auty C. Emmert
Arthur Walker

JACKSON COUNTY

Gainesboro

W. T. Anderson
L. R. Dudney
R. C. Gaw

JEFFERSON COUNTY

Dandridge

Sam D. Sullenberger
(Mbr. Hamblen Co.)

Jefferson City

T. A. Caldwell
(Mbr. Knox Co.)
Sam C. Fain
(Mbr. Hamblen Co.)
Frank Milligan
(Mbr. Hamblen Co.)
Estle P. Muncy
(Mbr. Hamblen Co.)

Strawberry Plains

Robert Creech
(Mbr. Knox Co.)
R. M. Webster
(Mbr. Knox Co.)

White Pine

E. Dale Allen
(Mbr. Hamblen Co.)
E. R. Baker
(Mbr. Hamblen Co.)

JOHNSON COUNTY

Mountain City

Paul J. Bundy
R. O. Glenn

KNOX COUNTY

Concord

Malcolm Cobb
R. H. Duncan
B. D. Goodge

Corryton

M. L. Jenkins
A. D. Simmons

Fountain City

J. Gordon Smith

Knoxville

Eugene Abercrombie
Alton Absher

—
*In Service

N. D. Achee, Jr.
(Mbr. Shelby Co.)
J. E. Acker, Jr.
Robert L. Akin
Chas. Armstrong
John W. Avera
Troy P. Bagwell
Robert M. Baker
O. E. Ballou
H. O. Bourkard
Floyd N. Bankston
Spencer Y. Bell
Walter H. Benedict
Chas. W. Black
Wade H. Boswell
H. O. Bourkard
H. O. Boukard, Jr.
M. C. Bowman
Jacob I. Bradsher
Robert Brashear
Robert Brimi
Clayton M. Brodine
Fred F. Brown
Horace E. Brown
Chas L. Butler
*Richard Butler
John Burkhardt
J. Ed Campbell
P. H. Cardwell
C. S. Carlson
L. G. Caylor
Jack Chesney
L. Warren Chesney
H. S. Christian
H. E. Christenberry
H. E. Christenberry, Jr.
K. W. Christenberry
W. F. Christenberry
C. L. Chumley
William E. Clark
Edward S. Clayton
Margherita C. Cook
Sam Cooper
William R. Cross
Miles S. Crowder
J. P. Cullum
H. K. Cunningham
C. Harwell Dahbs
Daniel Davis
Martin Davis
Oliver DeLozier
R. V. Depue
W. A. DeSautelle
W. T. DeSautelle
A. W. Diddle
Sheldon Donn
W. F. Dorsey
John Daugherty
Chas. R. Earnest, Jr.
J. Gilbert Eblen
E. M. Edington
Edward W. Ellis
J. B. Ely
W. H. Enneis
Frank Faulkner
Mark P. Fecher
George H. Finer
G. Wm. Galfivan
C. F. George
(Mbr. Hamblen Co.)
Garrison Geller
Vivian Gibbs
W. D. Gibson
Edgar L. Grubb
Glenn Grubb
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Knox	Waldo McLister, Brighton
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Roane
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Shelby
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Shelby
Shelby
Shelby
Tipton
Tipton
Tipton
Washington

(Continued from Center Spread)

1. An effective job of house cleaning can do much more for public relations than any other one project. This means the State must be fair but militant. It also means that local societies must give the evidence that only their members know, and can prove.
2. Any house cleaning job that smacks of a "whitewash" renders impotent other house cleaning attempts, no matter how sincere they may be. The patient-public is harsh in its judgments and quick to spread one case of bad behavior—although it is outweighed by thousands of cases of real service.

Other Activities

- Worked with with five communities on plans for their Hill-Burton Hospitals.
- Served as Tennessee legislative contact representative for AMA-in-Congress.
- Developed and arranged for numerous radio and press releases, programs.
- Presented the Public Relations Course for Medical Aides—pioneered in the Nation by TSMA—at the 1954 Press Relations Institute of AMA, Chicago.
- Provided material or made speeches before 47 groups, including P.-T.A., civic clubs, farm bureaus, labor unions, church groups, county courts.
- Developed a reciprocal Public Service Relationship between TSMA and The Tennessee State Nurses Association. Actively pushed nurse recruitment.
- Stimulated and actively assisted in Fair exhibits by Medical Societies.
- Requested new Medico-Legal Liaison Committee to sponsor series of area Medico-Legal Clinics for doctors and lawyers at Memphis, Jackson, Nashville, Knoxville, Chattanooga and Johnson City. Executive Secretary made arrangements for all of these except Knoxville, where Public Service Committee of Knoxville Academy of Medicine had worked out details with University of Tennessee Academy of Medicine for a comprehensive, two-day session. All Clinics have been conducted except Nashville and Johnson City, scheduled later, and both doctors and lawyers reported them "decided successes."
- Director traveled 32 thousand miles working on the scene for local Medical Societies, handling State Association business as Field Secretary, and 4,000 miles outside the State PS Program representing TSMA at medical meetings.
- Worked considerably with Veterans Affairs Committee in pushing the Tennessee Resolution with other State Associations and at "grass roots" meetings on two Congressional Districts.

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*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Annual Meeting Plans

Plans for the Annual Meeting of this Association which will be held in Nashville on April 18-21 are progressing well. There are several changes in the over-all pattern of this meeting and the highlights of the 1954 session are given for your information.

House to Meet Sunday, April 18

The House of Delegates will meet on SUNDAY, April 18, at 9:00 a.m. in the Old South Room of the Maxwell House. It is expected that the House will remain in session until mid-afternoon. Members of the House of Delegates include (1) the elected delegates representing local medical societies, (2) Officers, (3) Councilors, (4) Members of the Board of Trustees, (5) Past-Presidents. There is a total of 120 seats in the House, composed of 73 elected delegates, 8 Officers, 10 Councilors, 5 Trustees, and 24 Past-Presidents. The second session of the House will begin at 9:00 a.m. in the same room on Tuesday, April 20.

General Scientific Sessions

The general scientific sessions will be conducted on the MORNINGS of April 19, 20, and 21 (Monday, Tuesday, and Wednesday) in the Main Ballroom of the Maxwell House. The afternoons of the same days are set aside for the scientific programs of the various specialty groups which are meeting concurrently with the State Association.

Invited Specialty Groups

Specialty groups that have been invited to meet with us are: the Tennessee Thoracic Society, the Tennessee Orthopedic Society, the Tennessee Radiological Society, the Tennessee Pathological Society, the Tennessee State Pediatric Society, the Tennessee Chapter, American College of Surgeons, the Tennessee Academy of Ophthalmology and Otolaryngology, the Tennessee Academy of Preventive Medicine and Public Health, the Tennessee Heart Association, the Tennessee Diabetes Association, and the Woman's Auxiliary.

Many Have Accepted

Specialty groups which have already accepted the Association's invitation to meet with us are: the Tennessee State Pediatric Society, the Tennessee Academy of Ophthalmology and Otolaryngology, the Tennessee Academy of General Practice, the Tennessee Academy of Preventive Medicine and Public Health, and the Woman's Auxiliary. It is expected that other specialty groups will also accept. Only the Orthopedic Society has advised that they cannot meet with us.

Why Specialty Groups Have Been Invited

The purpose of this arrangement is twofold. (1) It will provide a splendid variety of scientific papers. Papers of general interest will be read in the mornings at the general sessions (to which all are invited) and highly specialized papers will be presented in the sessions of the various specialty meetings during the afternoons. Non-members of specialty groups are likewise invited to attend any of the specialty sessions for papers of particular interest to them, and (2) It should increase the total attendance. This Association is composed of general practitioners and specialists, and this meeting is designed to furnish every member with an excellent scientific program.

Evenings Will Be Full, Too

There will be something of interest for everyone on the evenings of Monday, Tuesday, and Wednesday, also. Monday night is "President's Night." Beginning at 8:00 p.m. in the Ballroom of the Maxwell House, it will feature addresses by President A. M. Patterson and President-Elect John R. Thompson, Jr. Dr. Patterson will review the accomplishments of his administration, while Dr. Thompson is expected to outline some of the things he would like to see the Association undertake in the coming year.

Special Awards

Special awards will be presented at President's Night, also. These are the "Outstanding General Practitioner of the Year" citation, and a

\$500.00 government bond to the winner of the State-wide School Health Project Contest. Tuesday evening has been kept open for the Annual banquets and business sessions of the various specialty groups and other associations meeting with the State Association.

"Fun Night" Will Be a Gala Affair

Wednesday evening is FUN NIGHT. This program of fun and entertainment is being planned for every member of the Association and their wives (or husbands) by the Nashville Academy of Medicine—the host society. Preliminary plans call for a full evening of fun at the famous Plantation Club on Murfreesboro Road. The Academy of Medicine is planning to lease the entire facilities of the Club for Wednesday evening for the exclusive use of the medical profession. Admission will be by ticket which will be sold at the registration desk covering just the cost of the dinner. The cocktail party, the orchestra, and the special floor show which the Club will secure for this occasion will be provided by the Nashville Academy of Medicine.

Local Committee on Arrangements

Members of the Academy's Committee who are arranging the FUN NIGHT program for your pleasure are Dr. Ray Fessey, Chairman; Dr. C. E. Haines, Co-Chairman; Dr. David Gotwald, Dr. Homer Pace, and Dr. Douglas Riddell. You will miss a wonderful affair, if you miss this!

Make Reservations Now

Every member of the Association should make his hotel reservations early. We have reserved a block of two hundred rooms in the Maxwell House. Other convenient hotels are the Noel (just across the street), the Hermitage and the Andrew Jackson.

New County Society Organized

Your Executive Secretary had the pleasure recently of assisting the physicians of Coffee County organize a new county medical society. The new society—The Coffee County Medical Society—is already a going organization. (See the "Programs and News of Medical Societies" section of this issue for further details.) Dr. Henry T. Kirby-Smith, Sewanee, Councilor of the Fifth District, and Dr. T. R. Ray, Shelbyville, assisted with the organization. The new society will petition the House of Delegates for a charter during the Annual Meeting on April 18-21.

Foundation's Board and Committee Hold Joint Session

The Board of Directors and the Committee on Health and Medical Care of the Tennessee Medical Foundation held a joint meeting in Nashville on Sunday, January 10, with the following present: Directors—Drs. E. G. Kelly, Frank Roberts, Daugh W. Smith, A. M. Patterson, and Ralph Monger, Chairman. Committeemen present were Drs. Ben Overholt, Chairman; Cecil Newell, J. S. Hall, Robert C. Berson, R. H. Kampmeier, R. H. Hutcheson. Others attending were Ed Bridges, Dr. John Winebrenner, Bill Nothorn, Dr. Harry Handley, of the Commonwealth Fund, Clifford Seeber, Secretary to the Committee, and your Executive Secretary.

Committee Report Shows Real Progress

Dr. Overholt, Chairman of the Committee, made a report on the Committee's work in the Pruden Valley Area. The report showed remarkable progress in the solution of the problem of medical service for the Valley. Dr. Handley expressed satisfaction with, and approval of the progressive work of the Foundation and its Committee.

Building Almost Ready

Plans were made for securing a physician to occupy the new, remodeled clinic facility which is being readied by the Committee. A special Budget Committee was appointed to plan methods of financing the Committee's work for another two years. Commonwealth Fund assistance is contemplated. The Board and Committee will meet jointly again on February 21 in Nashville to approve the budget which the special committee will submit.

Foundation Membership Drive to Be Launched

Among other important actions was the authorization and instruction of the Executive Secretary to proceed immediately with the preparation of an informative brochure on the Foundation which is to be sent to all members of the Tennessee State Medical Association, the Tennessee State Dental Association and the Tennessee State Nurses Association, along with an invitation to membership in the Foundation. The Foundation—a non-profit, chartered corporation dedicated to improving medical care in marginal areas—needs and deserves the financial and moral support of every member of this Association.

Public Service

THE TENNESSEE TEN

Chattanooga Has Lay Executive

The Chattanooga-Hamilton County Medical Society has employed a full-time lay Executive Secretary and on January 1 he began work handling the Society's business affairs and its expanding Public Service Program.

The Secretary is Robert C. Hart, 37, widely experienced in administrative, public relations and public affairs work. During World War II he was on the public relations staff of The Maritime Commission before it was absorbed into The Department of Commerce. Until recently he was on the secretarial staff of a Southern Senator in Washington. He is a graduate of the University of Missouri and received his Master's Degree in Fine Arts from the American University in Cairo, Egypt.

Hart is married to the former Miss Roystine Epperson of Charleston, Tennessee, and they have four children.

The Society's headquarters office is at 108 Medical Arts Building, Chattanooga.

Dr. Van Order Speaks Out On An Obligation

The Society in Chattanooga installed its 1954 President, Dr. William E. Van Order, at a Read House banquet on January 7. He succeeds Dr. William G. Stephenson, whose remarkable job of organizing and directing The Tennessee Valley Medical Assembly last September is still the talk of national postgraduate medical circles.

Dr. Van Order devoted his inaugural address, entitled "Begone With the Status Quo," to the subject of Public Service. He feels deeply about the profession's obligation to render public service while practicing its primary purpose of healing the sick.

We requested his permission to quote herewith a section of the Presidential Address dealing with one of Medicine's obligations:

Dr. Van Order said:

"Now I come to a delicate subject which shouldn't be a delicate subject at all. It is racial discrimination in medicine. Those of you who remember the Hippocratic oath must acknowledge that it is regarded as a basis for medical ethics and all true physicians respect and accept its precepts. The American College of Surgeons has a creed to which all subscribe who have been admitted. The pertinent section of both creed and oath states that you pledge to help spread your knowledge and the knowledge of your brothers to all doctors. The plaque from the American College of Surgeons states specifically "regardless of race, creed or color."

"To a large extent, discrimination in medicine is a result of discrimination in society generally. It is important to remember then, that the doctors and hospitals and medical schools engaging in discriminatory practices are victims as well as culprits.

"Yet it is by no means true, as many claim, that they cannot help to eliminate discrimination in medicine themselves—that they must always wait for community action rather than lead the way to right conduct. We have heartening evidence to the contrary right in our neighboring state of Georgia, where several large medical societies have invited the colored doctors to attend their scientific sessions. It is a solemn obligation of our Society, and all Medical Societies, to give the colored physicians the benefit of our scientific sessions, and I so recommend. It is a poor excuse to say that we can do it by going to their Society meetings and talking to them. That is nothing but evasion

and the proponents of such a plan—in their own hearts—know it.

"Let there be no misunderstanding and no misquotation of my recommendation. It is simply this: we are obligated to invite the qualified colored doctors of this section to our "scientific" sessions and share with them whatever experience, training and talent we have gained in our practice and research.

"If this is not done, there is a distinct possibility that shortly we may have no choice; that we may be compelled, with no reservations, to allow full participation in all medical activities. Discretion could be the better part of valour."

Newspapers Ask Repeat Forums

The Medical Forums such as those conducted in Jackson, Memphis and Nashville last fall will be conducted in January, February and March in Knoxville, Chattanooga and Johnson City. The format will be the same. Forum speakers will be members of the medical societies in those cities. The sponsoring newspapers will be The Knoxville News-Sentinel, The Chattanooga Times and The Johnson City Press-Chronicle.

Subjects chosen for five Forums each in Knoxville and Chattanooga are (1) Cancer: No. 2 Killer, (2) The Miracle of Childbirth, (3) Surgery and Anesthesia as Lifesavers, (4) Self-Medication or The Use and Abuse of Drugs, and (5) The Cost of Medical Care.

Publishers of The Commercial Appeal in Memphis and The Banner in Nashville found the Forums to be of such high public service value that they want to repeat them this year.

Thirty-four income tax exemptions allowable to doctors are stated and explained in a valuable article in the December, 1953, issue of Medical Economics, Page 135. Judicious application of the advice given in the article will help to ease the bite on 1953 income. This excellent magazine deserves the profession's thanks for the highly useful business articles, as well as medical organization pieces, it carefully prepares and prints.

Dr. R. H. Kampmeier rendered a Public Service to another State (Territorial) Medical Association in December. He was the guest speaker for the Puerto Rico Medical School at the Puerto Rico Medical Association's Annual Session December 9-13.

He spoke on Diffuse Arteritis, The Serodiagnosis of Syphilis, and conducted a CPC at the Association's meetings. He talked to several classes at the Medical School at San Juan which graduates its first class of doctors in 1954.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Annual Meeting Reminder

Don't forget to make your plans to attend the Annual Meeting of this Association in Nashville, April 18-21. The Maxwell House will be headquarters, with two hundred rooms available. Other hotels conveniently located are the Noel (just across the street), the Hermitage, and the Andrew Jackson. Please make your hotel reservations direct—but make them soon!

Exhibitor Complaints

Most members will recall the very unfavorable report on our last meeting by the Medical Exhibitors Association which was summarized in this section in the June, 1953, issue. Appraising our Memphis meeting from the exhibitor's point of view, the Association really gave us a black eye on 1.) physician interest, 2.) physician traffic, 3.) sales and inquiries, and 4.) quality of meeting.

A New Approach

Your Executive Secretary determined to do something about this situation at the next and subsequent meetings, and, as he pointed out in the June issue, there's plenty the physicians can do about it, too. Here's the new approach to the problem. With the premise that the exhibitor makes two major contributions to the meeting—namely, enhancing its scientific value and providing needed financial support—our relations with them should be a TWO-WAY street. Their needs, their points of view, their suggestions, and their constructive help are integral parts of the exhibit planning this year.

Exhibitor's Committee Appointed

In November, your Executive Secretary requested leading members of our exhibiting firms to provide a Committee of five men (all employees of firms interested in our meeting) to work with him in planning the exhibits. They enthusiastically accepted. Committeemen are Harry Jones, Parke, Davis & Co., Chairman; Wm. H. Haynes, Mead Johnson & Co.; Dan Milam, John S. Milam Optical Co.; Raleigh T. Blanks, Theo Tafel Co., and Jim Ewing, X-ray Engineers.

Committee At Work Now, And—

This Committee has met five times with your Executive Secretary and advised him on 1.) physical layout of exhibit hall, 2.) preferential list of prospective exhibiting firms based on a merit system, 3.) form and content of invitational letters, 4.) communicating with exhibitors on suggestions for improving the meeting, 5.) assignment of space, and 6.) setting scientific and professional standards for the exhibitors.

At the Meeting

And that isn't all the Committee will do. They will have a part in the entire arrangements as they affect exhibitors, and finally, they will be on hand in the Exhibit Hall during the entire meeting to assist exhibitors with their problems. They will iron out complaints, and do their best to give you the finest and most cooperative array of thirty-four dignified and courteously-manned booths possible.

Exhibitor's Contributions

Your Executive Secretary and his Advisory Committee will do their part to bring you an outstanding exhibit hall. The exhibitors will add greatly to the scientific value of the meeting and will pay booth fees of approximately \$5,000.00 for the privilege of doing so. (This is equivalent to a registration fee of \$15.00.)

The Doctor's Part

Physicians can, with profit to themselves, guarantee a "successful meeting for the exhibitors" by visiting every booth, listening to their story, and expressing appreciation for their contribution to a fine meeting. There is only one reason why these firms will be with us, and

that is to make physician-contacts. Doctor, the success of the exhibits is in your hands!

Foundation Membership Drive

By action of the Board of Directors of the Tennessee Medical Foundation at a recent meeting, Your Executive Secretary, who is also Secretary of the Foundation, was authorized and instructed to launch a membership drive for the Foundation. An informative brochure on the Foundation is now being prepared and will be mailed soon, along with a membership application, to every member of the Tennessee State Medical Association. The worthy objectives of providing better medical care in marginal areas, promotion of postgraduate instruction, and actively working for the extension of medical knowledge are long-range projects that physicians will want to support. Although the Foundation is not yet two years old, it has demonstrated constructive leadership in improving medical care in several target areas in Tennessee. It deserves your active and financial support.

Trustees to Name New Executive Secretary

The Board of Trustees will meet in a called session on February 14 in Nashville for the purpose of selecting an Executive Secretary to succeed the incumbent who has resigned effective May 31. It is hoped that my successor can work in the office for several weeks prior to May 31, and that he can attend and assist with the Annual Meeting in April.

AMA Regional Legislative Conference

Your Association was well represented at the Regional Legislative Conference in Atlanta on Sunday, January 31. Sponsored by the AMA, significant pending and anticipated legislation at the national level was discussed. Those attending from Tennessee were: Dr. C. M. Hamilton, Nashville, Chairman of our Legislative Committee; Dr. T. R. Ray, Shelbyville, and Dr. Herbert L. Pope, Knoxville, members of the Legislative Committee; Dr. A. M. Patterson, Chattanooga, President; Drs. Ben Overholt and John D. Winebrenner, Knoxville; Ed Bridges, Nashville, Public Service Director, TSMA; Mr. Jack Ballentine, Nashville, Executive Secretary, Nashville Academy of Medicine; and Mr. Robert Hart, Executive Secretary, Chattanooga-Hamilton County Medical Society.

Two New County Societies to Apply for Charter

There will be two petitions requesting charters for two new local medical societies before the House of Delegates during the Annual Meeting. Thirteen physicians of Coffee County, with the assistance of the Executive Secretary and the Councilor, Dr. Henry T. Kirby-Smith have organized the Coffee County Medical Society, and the physicians of Hickman and Perry Counties have also organized the Hickman-Perry County Medical Society. Both societies have formed temporary organizations, elected officers, adopted constitutions and by-laws that are in conformity with the constitution and by-laws of the State Association. Both new societies have elected delegates to the State meeting. Action on the petitions will be scheduled early in the first session of the House in order that the new societies' delegates may be seated and participate in the deliberations of the House.

Members Invited to Observe House in Action

In-as-much as the first session of the House of Delegates will be on Sunday, April 18, and no other function will be scheduled, members of the Association arriving on Sunday are invited to attend the meeting of the House. Most members, who have not served as delegate, would find a well-organized body dealing efficiently with the policy affairs of the Association. Having observed many such bodies in action, your Executive Secretary has never witnessed any deliberating group that is more orderly, parliamentary, and conscientious than your House. Much credit for its efficiency is due to the expert manner in which our Speaker, Dr. Chas. C. Trabue IV, presides. A visit to the House will be informative and stimulating. You are welcome.

Special Note To Society Secretaries

Secretaries of local medical societies who haven't done so are reminded to get the lists of 1954 officers, delegates, and candidates for the General Practitioner Award to the Executive Secretary at the earliest possible date. This information is essential for the Journal, for publication of the Handbook for the House, and for the general official program. Particularly needed now is the list of delegates from which the Speaker will appoint important reference committees.

Public Service

THE TENNESSEE TEN

Tennessee Plan For Indigent May Spread

The Tennessee Plan for care of the medically-indigent commanded attention at the Southern Regional Conference on legislation conducted by the AMA in Atlanta on January 21.

The Eisenhower Health Program was being discussed in the morning session. Several State Association delegates asked if anyone had a plan for the medically-indigent. Dr. C. M. Hamilton, Chairman of Legislation and Public Policy for the TSMA, arose to cite the Indigent Law pushed through the Tennessee General assembly.

After the program was explained, several State delegates asked for a blueprint of the plan. At a luncheon recess, others cornered the Tennessee doctors and asked for details. We left the Conference with requests for details from all nine States represented. The blueprints have been dispatched to all of these States.

The Public Service Committee, headed by Dr. L. W. Edwards, is in the middle of the job of telling county courts how they may participate in the Indigent Plan. Only last week the Franklin County court in Winchester voted to participate.

From Jack Ballentine, Executive Secretary of the Nashville Academy of Medicine, I am borrowing a report on the Atlanta Conference.

It follows:

The purposes of the conference were: (1) To explain and perfect the system used by the Committee on Legislation in alerting key legislative personnel in situations requiring immediate contacts with members of Congress, and (2) discuss the most important medical issues to be considered during the Second Session of the 83rd Congress.

Two members of the AMA Committee on Legislation conducted the conference. They were Dr. Clark Bailey of Harlan, Kentucky, and Dr. Reuben Chrisman of Miami, Florida. Several subjects were discussed by Mr. C. Joseph Stetler, Secretary of the Committee on Legislation for AMA.

Dr. Chrisman presented a method of obtaining information and alerting key legislative personnel. A questionnaire was submitted to members of the conference requesting their views on the following four points. (1) The President's proposed reinsurance plan, (2) Extension of Social Security coverage to include physicians, (3) Proposed amendment to limit treaty making powers (Bricker amendment), (4) AMA position regarding medical benefits for veterans with non-service-connected disabilities.

12 Major Proposals

There were 12 major legislative proposals presented. The 12 proposals follow with a brief statement as to the status and their prognosis.

1. Federal Subsidization of Private Health Insurance Plans: AMA's policy is to endorse the project generally. No further commitments—await clarification of details. Believe that members of Congress are cooling on proposed plan and that it will not pass Congress in present form.

2. Extension of Social Security Coverage to Include Physicians: Physicians are part of the 10,000,000 persons to be covered under expanded Social Security plan. It is believed that Congress will pass this measure but there is a strong possibility that physicians will be given the option on participation.

3. Permanent and Total Disability Insurance Under Social Security: Very little said on this matter. Intent of the Social Security plan

from inception was to render some type of total disability insurance. Mr. Stetler believed this would eventually come about.

4. Waiver of Premium Payments Under Title II of the Social Security Act During Period of Permanent and Total Disability: Statistics presented indicated that 80% of the population have no medical bills. Three per cent have medical bills of \$200.00 or more outstanding. Mr. Stetler discussed this very complex problem and stated that it was his belief that a new formula for determining Social Security benefits would eventually come about and total disability periods would be exempt in computing benefits.

Tax-Exempt Annuities

5. Tax Deferments on Premiums Used to Purchase Retirement Annuities: This is the Reed-Keogh Bill. No possibility of it passing this Congress.

6. Medical Care for Dependents of Service Personnel: Reported this matter has been discussed on a number of levels. Nothing definite as yet.

7. Proposed Amendment to Limit Treaty Making Powers (introduced by Senator Bricker): Called by Mr. Stetler the most far reaching amendment touching upon domestic issues ever to be considered by the Congress. No chance for the Bricker Amendment as now written to pass. A compromise of some type will have to be agreed upon.

8. Federal Aid to Medical Education—Military Medical Scholarships: Discussed at length. Felt this was a dangerous issue. Military medical scholarships proposed to make the service more attractive as a career to physicians. By so doing, would eventually eliminate the doctor draft.

9. Universal Military Training: Practically no discussion, nothing definite presented.

10. Income Tax Deductions for Medical Expenses: It was strongly believed that income tax deductions for medical expenses would be made available.

11. Medical Benefits for Veterans with Non-Service-Connected Disabilities: Very little discussion, touched upon lightly. The Tennessee Plan was stated but with no comments.

12. "Free" Hospitalization for Social Security Beneficiaries: Not looked upon with favor. Very little discussion.

Ten thousand Bills confronted the opening of the 83rd Congress; 275 of these directly affect medical care and medical practice.

In summary, it was felt that now as never before organized medicine must be alert and active in the legislative proposals stirring within the country and for presentation to Congress. States also were urged to be alert in the legislatures.

Important VA Program Is Brushed Aside

That concluded the report on the legislative Conference. However, do you remember the musical title of other years: "The Song Is Ended, But the Melody Lingers On"? If so, please look back at Number 11 in Mr. Ballentine's report.

The vitally important issue of VA Medical Care was placed next to last on a full Agenda. The discussion from the stage consumed about two minutes. There was no time for questions. We tried in St. Louis, and we tried again in Atlanta, to learn whether the AMA plans to PROpose anything to Congress to implement its VA Medical Care policy. Apparently it does not in the 83rd Congress. We want to ask a polite but insistent question: Does the AMA believe in its own policy? Will it fight for it—or forget it? Tennessee does believe in The Tennessee Plan for medically indigent veterans and will continue to fight for it. As Dr. H. H. Shoulders says, "We can, in honor, fail to succeed. We cannot, in honor, fail to try."

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

More About Annual Meeting

You have already received the official announcement of the Annual Meeting of the Association. It was designed to do three things: 1) give you an outline of major events, 2) give you a convenient hotel reservation card, 3) to emphasize an unusual meeting which you should not miss.

Three Themes— Business

The meeting is well planned. Here are some of its distinguishing features. First, it is built on three themes—Business, Education, Fun. On the business side will be two important sessions of the House of Delegates—the policy-making body of the Association, the annual meeting of the Board of Trustees, and official sessions of many Committees, particularly the Committee on Post-Graduate Instruction and the Public Service Committee. Please notice that a full Public Service Conference is scheduled for Wednesday afternoon in the Ballroom of the Maxwell House, with no competing meetings of any group.

Education

From an educational standpoint, this meeting is unusually good. You are referred to a special section of this issue of the Journal for details on the General Scientific Sessions and Programs of the various specialty groups that were available at press-time. The scientific offerings have broad appeal, and every member can certainly find papers and symposia of personal interest. Your Executive Secretary and Dr. R. H. Kampmeier, Chairman of the Program Committee, are grateful for the splendid cooperation of the specialty groups which accepted our invitation to hold their meetings concurrently with the Association. This arrangement has greatly increased the versatility and variety of the scientific attractions of this meeting. A carefully selected array of technical exhibits will add significantly to the scientific quality of the meeting.

Fun

Now, for the Fun side of the picture. The Nashville Academy of Medicine, the host society, has planned a gala affair for doctors and wives for Wednesday evening, April 21, at the famous Plantation Club on Murfreesboro Road. The Club has been leased for the exclusive use of the Association the entire evening. Ceremonies—and it's all fun—will begin at 7:00 p.m. Don't miss this! You'll regret it later.

Social Functions

Interwoven throughout the four days are luncheons, banquets, parties, and other "get-togethers." Nashville, long admired for its genuine Southern hospitality, has rolled out the welcome mat. You and your wife will find many congenial groups bidding for your presence. It's more important than ever that wives attend. The Auxiliary has a splendid program of business sessions and social affairs planned. Too, wives would profit greatly by participating in the Public Service Conference on Wednesday afternoon.

State Meeting Plays Important Role in Medicine

That, briefly, is the outline of a great meeting. It answers a frequent question in these days of meetings, meetings, meetings. That question is, WHY ANOTHER MEETING? It is the considered opinion of your Executive Secretary that a State Meeting, not only of Tennessee, but in all the States, should be a high-priority, helpful and carefully planned affair. A State Meeting has a role—an important one—in organized medicine that cannot be played by any other group. Your State Medical Association, standing strategically between the local society and the American Medical Association, is the common ground on which all physi-

cians can muster for the preservation and perpetuation of the finest in medicine. Through your State Association, with its inescapable responsibility in the professional, political, social, and economic factors affecting the practice of medicine, the individual member enjoys a great bulwark of strength, opportunity, and professional atmosphere that would otherwise be impossible.

Broad Objectives

This important function of the State Association in the professional aspects of organized medicine dictates the appropriate kind of a State meeting program. It, too, must have personality, individuality, and broad appeal. Scientific education? Yes. Fun and relaxation? Yes. Concern for meeting the ever-expanding problems surrounding the practice of medicine? YES. All these, and more, are objectives for the meeting in Nashville on April 18, 19, 20, 21. We believe you will enjoy it.

Trustees Name New Executive Secretary

The Board of Trustees, meeting in called session in Nashville on February 14, elected Mr. Jack E. Ballentine of Nashville as Executive Secretary of the Association. Mr. Ballentine will assume the office on June 1. He has served as Executive Secretary of the Nashville Academy of Medicine for the past four years, and prior to his present position, he had broad experience in organizational work, public relations, and newspaper experience. Mr. Ballentine is conscientious, loyal, and has the "feel" and appreciation for the high idealism of medicine. Your present Executive Secretary wishes him well and is doing all that he can to acquaint his successor with the activities and responsibilities of his office.

New Committee Created

The Board also created an important Committee on Liaison with the Tennessee Bar Association. President A. M. Patterson conveyed an urgent request from the President of the Bar Association for such a liaison group of doctors. Mutual problems, particularly those in the field of physician-court relationships, will be attacked by this Committee. Personnel of the Committee will be announced next month.

Foundation Membership Drive

You received recently another important communication—the new brochure describing the work of the Tennessee Medical Foundation and a membership application. We believe every member of the Association should support the Foundation with money and time. Its objective—better medical care—is one to which all physicians can subscribe. Its present successful efforts to improve medical care in marginal areas are demonstrating its effectiveness and importance. Send your membership in now to Dr. Daugh W. Smith, Treasurer, Tennessee Medical Foundation, 325 Doctors Building, Nashville, Tennessee. (Voting membership \$25.00; Founder's \$500.00; Life membership \$1,000.000.)

Other Groups To Be Invited

Members of the Tennessee State Nurses' Association and the Tennessee State Dental Association will also receive the Foundation brochure and a membership application. The Foundation needs the active cooperation and support of these allied professional groups, since good over-all medical care requires adequate dental and nursing services, as well as physicians' services. Already, officials of both the Nursing and Dental groups have been most helpful in the Foundation's planning.

Civil Defense Course Results

Final attendance figures on the Civil Defense Course for professional personnel sponsored by this Association, through its Committee on Emergency Medical Service, are now available. West Tennessee, with teaching centers in Memphis, Jackson, Ripley, Paris, and Union City, enrolled 278 people. Of these, 78 were physicians, or 28 per cent. Middle Tennessee, with teaching centers in Columbia, Nashville, Clarks-ville, and Cookeville, had a total attendance of 459 persons, 26 per cent of whom were physicians.

The East Tennessee Course, under the sponsorship of the Tennessee State Dental Association, will get under way in April with teaching centers at Johnson City, Knoxville, Chattanooga, Morristown, and Athens. Physicians in the area will receive a complete schedule on time, place, and faculty in the near future.

Public Service

THE TENNESSEE TEN

Stimulating Session Planned on Public Service During 119th Annual Session of The Association

The Public Service Committee will conduct a special Conference on Grievance Committees, Rural Health and Legislation as a stimulating feature for both doctors and their wives during the 119th Annual Session of TSMA at the Maxwell House.

Please leave Wednesday afternoon open for this Conference. It opens in the Ballroom at 2 p.m. under direction of Dr. L. W. Edwards, Public Service Committee Chairman. After a keynote message, Dr. Edwards will turn the Conference over to the Moderator, Dr. John E. Cox, Chairman of the Public Service Committee of The Memphis and Shelby County Medical Society.

The Woman's Auxiliary is joining in the Conference and two speakers are women. The Conference speakers and their subjects are highlighted below.

"THE GEORGIA BETTER HEALTH COUNCIL"

MRS. SHELBY C. DAVIS, Atlanta

President-elect

Woman's Auxiliary to The Medical Association of Georgia

* * *

"THE SERVICE APPROACH TO PUBLIC RELATIONS"

DR. CHRISTOPHER McLOUGHLIN, Atlanta

Public Relations Chairman

Medical Association of Georgia

* * *

"LET'S DO CALL THEM GRIEVANCE COMMITTEES"

DR. CHARLES C. SMELTZER, Knoxville

TSMA Public Service Committeeman

* * *

"LEGISLATION: NASHVILLE AND WASHINGTON"

DR. C. M. HAMILTON, M.D., Nashville

Chairman TSMA Legislative and Public Policy Committee

* * *

"THE SECOND BIRTH OF A COUNTY HEALTH COUNCIL"

J. D. GRISSOM, PH.D.

Health Educator, Gibson County Public Health Department

* * *

DISCUSSION OF DR. McLOUGHLIN'S ADDRESS

DR. ROY L. McDONALD, Knoxville

Chairman Knoxville Academy of Medicine's Public Service Committee

* * *

DISCUSSION OF MRS. DAVIS' ADDRESS

MRS. CARROL C. TURNER, Memphis

Public Relations Chairman, Woman's Auxiliary to TSMA

* * *

ADJOURNMENT FOR "FUN NIGHT"

HAVE YOU JOINED The Tennessee Medical Foundation? In a confidential envelop, the Public Service Department designed and mailed to all TSMA members a folder explaining the organization, purposes and method of operation of this humanitarian and scientific organization. The folder contained a return coupon for enrollment and initiation fee. A number

TMF Kick-Off
Bringing
Checks

of physicians already have joined and sent in their (tax deductible) checks, to assist this organization in the vital job of extending medical care to sub-standard areas of Tennessee.

Very soon, the folder will be sent to all members of the Tennessee State Dental Association and the Tennessee State Nurses Association. Many physicians have asked us detailed questions about the Foundation and herewith are some broad statements in answer.

A Problem

The people of Tennessee receive the best and the poorest medical care in the world.

In communities where there is a concentration of wealth and population, medical care is usually good.

In sparsely settled or isolated communities, medical care is usually poor—sometimes non-existent.

No single group is entirely responsible for this situation yet all suffer as a result.

An organization has now been formed to work toward a solution of this problem.

The Organization— What It Is

The Tennessee Medical Foundation is a non-profit institution, founded by doctors who are determined that all the people of Tennessee enjoy the best possible medical care at the lowest cost.

It is chartered under Tennessee Law and all money that you contribute to it will be spent to extend medical care to people; particularly those in areas where there is a shortage of physicians, dentists, nurses, hospitals, clinics, and public health services. No money will be spent for direct services such as treatment but rather for personnel to help people help themselves.

You may, if you wish, become a part of this humanitarian movement.

Who Started the Foundation?

The Founding Fathers of the Tennessee Medical Foundation are men who have served long in healing the sick, training doctors, and pushing the extension of medical care in the fields of private practice and public health. They are:

Dr. Ralph H. Monger, Knoxville, Foundation President and Past President of the TSMA.

Dr. Ernest G. Kelly, Memphis, Past President of TSMA.

Dr. A. M. Patterson, Chattanooga, President of TSMA.

Dr. Daugh W. Smith, Nashville, Foundation Treasurer and Past President of TSMA.

Dr. John B. Youmans, Nashville, Dean of the Vanderbilt University School of Medicine.

Dr. Frank L. Roberts, Memphis, Assistant Dean of the University of Tennessee School of Medicine.

Why Was It Started?

This organization was born because it had to be born. Many communities, trying to solve their health and medical care problems, needed professional guidance in even approaching their problems.

This professional guidance is being provided by the Foundation. It can be broadened by bringing in other professions in the medical field, particularly dentists and nurses.

The highest aim of the Foundation is to help people help themselves.

Who Will Benefit?

Many communities and thousands of people will benefit by the work of the Tennessee Medical Foundation.

People living in communities that are medically isolated—where there are no doctors, nurses, dentists, or public health services—will benefit most.

People living in areas where health and medical care needs are only partially met will also benefit from the work of the Foundation.

How Does It Operate?

The Foundation has a Committee on Health and Medical Care and a full-time field secretary who are working intensively with four "target areas." The Committee and Secretary are helping local leaders in these areas procure better hospital and clinic facilities; well-trained physicians, dentists, nurses and public health services.

In this program community leaders are learning how to solve some of their own health and medical care problems.

First, by joining the Foundation and

Second, by giving time, talents and moral support to its program.

Voting memberships are \$25.00; "Founder" memberships are \$500.00 to \$1,000.00; Life memberships are \$1,000.00 or more. Membership payments are cumulative.

How Can I Help?

Here is a humanitarian Public Service project in which your invested dollars will pay dividends.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Legal Liaison Committee Holds First Meeting

The new Legal Liaison Committee (to the Tennessee State Bar Association) held its first joint meeting with the Committee from the Bar Association in Nashville on Sunday, April 4, at the Andrew Jackson Hotel. Those attending were:

Dr. George K. Carpenter, Chairman, Nashville)	
Dr. Edward T. Newell, Jr., Chattanooga)	Committeemen
Dr. Roy McDonald, Knoxville)	TSMA
Dr. Dick McCool, Memphis)	
Mr. George T. Lewis, Jr., Chairman, Memphis)	
Mr. Gus A. Wood, Chattanooga)	Committeemen
Mr. Lon P. MacFarland, Columbia)	TSBA
Mr. Andrew Johnson, Knoxville)	

Others present were:

Dr. A. M. Patterson, Chattanooga, President, TSMA
Mr. Charles L. Cornelius, Sr., Legal Counsel, TSMA
Mr. Ed L. Bridges, Public Service Director, TSMA
Mr. Jack E. Ballentine, Executive Secretary-Elect, TSMA
Mr. V. O. Foster, Executive Secretary, TSMA
Mr. John Sandidge, Executive Secreary, TSBarA

Purposes of the Committee

The Committee, appointed by the Board of Trustees on request of President Patterson, who in turn had had a request from the Bar Association for such a Liaison group, considered some of the problems related to physician-court-attorney relationships. Representatives of the Bar Association stated that the problems from their point of view lay generally in four categories: (1) The unwillingness of some physicians to testify in court, (2) Failure of some physicians to provide attorneys with medical reports, (3) Giving medical reports to unauthorized persons, and (4) Charging excessive fees for depositions and court attendance.

Problems

Members of the medical group, after being assured that the above complaints were not placed against doctors generally, explained some of the reasons for what might be regarded as unconcern by physicians. These were: (1) Some physicians are scared to death of courts and attorneys", (2) Opposing counsel tries to secure unauthorized reports, (3) Loss of professional time in court attendance often exceeds attendance fees many times over, and (4) Some physicians just don't have clerical personal available for prompt reports.

Education and Cooperation—

These, and other infrequent misunderstandings were discussed fully and courteously. The consensus of the group was expressed in a resolution which stated that these and other items of mutual interest can be handled through cooperation and education. Recommendations that will go from the Committee to both Associations include the following: (1) that articles dealing with the problems be published on an exchange basis in the Journals of both Associations, (2) that local medical societies and local bar associations sponsor and jointly plan periodic regional seminars on medico-legal subjects, (3) that courses on medico-legal matters be encouraged at the University of Tennessee, and (4) that local bar associations and local medical societies exchange speakers on medico-legal questions, and (5) that both Associations undertake an educational program on the subject for its members. The conference was closed with the observation that "we can solve our little problems and promote our mutual interests best through education and cooperation." Future joint meetings are planned.

Methods

**Journal
Advertising
Jumps**

Advertising revenue for the Journal has taken a sharp up-turn during the first quarter of this year. We quote an interesting telegram from the State Journal Advertising Bureau which handles our national accounts:

COPY

March 10, 1954

Mr. V. O. Foster, Business Manager
Journal of the Tennessee State Medical Association
Dear Mr. Foster:

In reviewing the billing figures for the first three months of the present fiscal year—December, 1953, through February, 1954—we note that we have a favorable increase for all our member journals over the same billing period last year.

Your particular Journal enjoyed an increase of 26.4% for this three-month period.

Business for the remaining nine months looks pleasing although present percentage increases may level off a bit.

Sincerely yours,
ALFRED J. JACKSON
Director

Thanks, Mr. Jackson, for a swell selling job. With this substantial increase from national accounts, and with our income from local advertising constantly increasing, advertising revenue this year may exceed last year's by \$4,000.00. Our budget estimate for 1954 is \$16,000.00.

**May Issue to
Be Annual
Meeting
Reference
Number**

Watch for your May issue of the Journal. This year, as in the past four previous years, the May issue will be the "Annual Meeting Reference Number." It will be a valuable reference for the next whole year. It will carry abstracts of the proceedings of the House of Delegates, the Board of Trustees, Officers' reports and a general summary of the entire 119th Annual Sessions to be held in Nashville, April 18-21. In addition to a complete resume of the meeting, it will carry the new officers of the State Association and of local medical societies.

**"Caught in
the Middle
Again"**

You may wonder why there is so little about the Annual Meeting on these pages this month. This year, just as always happens, this issue of the Journal must go to press just before the meeting, and is mailed just after the meeting. We are really caught in the middle. Previous issues (since last November) have carried details on the Meeting. They are complete. The meeting this year has more careful planning, more cooperation from various groups than ever before. It offers the most versatile scientific program of all time. As far as humanly possible, those responsible for the myriads of detail have gone all out to give you the biggest and best meeting ever. If you missed it, we hope you will gain pleasure and information from reading the May issue.

**Important
Meeting on
Tennessee
Plan
Scheduled**

The Executive Sub-Committee of the Prepaid Insurance Committee has scheduled an important meeting on Saturday, April 17, at the Maxwell House, just preceding the Annual Meeting. The meeting was called by Chairman N. S. Shofner for hearing the reports and recommendations of three important study sub-committees. These study-committees will report on the matter of extending the benefits of the Tennessee Plan to include medical care, X-ray and anesthesiological benefits.

These study committees, and the Executive Sub-Committee will have the advantage of broad representation from the commercial insurance companies and non-profit associations now selling the Tennessee Plan present at the meeting for evaluating recommendations of the study committees from an actuarial and underwriting point-of-view. Major decisions and any modifications of the present Tennessee Plan that may develop as a result of this meeting will be reported to the House of Delegates on the following day.

Important facts on the Tennessee Plan (April 1):

- a) 650,000 enrolled
- b) 1,700 participating physicians
- c) 35 approved underwriters—commercial and non-profit
- d) Over 50% increase in enrollment over last year
- e) 2 out of every 3 surgical contracts in Tennessee are Tennessee Plan contracts

Public Service

THE TENNESSEE TEN

Health Project Is Inspiration

In each April issue of this section of the Journal we report on the high school competition sponsored by the Woman's Auxiliary to the Tennessee State Medical Association.

This year the competition was switched from an Essay Contest to a Health Project Contest. The winner received a \$500 Savings Bond. This winning project was such a unique and effective job that we are publishing here the report submitted by two high school girls, representing their class.

Doctor James C. Gardner, Chairman of the Board of Trustees and Treasurer of the TSMA, had this to say in presenting the award:

"This class of girls has shown us what modern youth can do by applying initiative, originality, and sincere interest in the community."

The champions were the fourteen girls who make up the Sophomore Home Economics Class of Obion High School. Here is the official report written by students Bonnie Gray and Jarrett Martin.

"In trying to decide what our biggest health problem was in our school and community we made investigations which led us to the conclusion that many of the pupils were either not eating any breakfast or a very unbalanced one; in many cases it was composed of a bar of candy or a cup of coffee.

"Having studied the need for a good breakfast, we know we could not do our best work if we continued to neglect the most important meal of the day. In trying to decide what to do about it we discussed causes, results and made plans to see what we as a class could do. First we made unexpected surveys of each grade from which we got amazing reports. In some cases, more than two-thirds of a class had eaten no breakfast on the day the survey was made. More than half of the first grade drank coffee. Surveys were made in adult groups with similar findings.

The Problem Is Tackled

"Now that our problem had been discovered, we decided to launch a campaign in which every person in school and the community could have a part. We divided into groups of two and worked several days on plans, each group deciding on one special phase of the breakfast project.

"First we must get our project before the parents, and this was done by making posters, many and various kinds, all original, and putting one in each of our downtown store windows, including beauty parlors and service stations, making each appropriate for its location as 'Is Your Carburetor Missing? What about that breakfast you didn't eat?' In one of the dry goods stores we placed a huge 'basis pattern' poster. Display windows were arranged in which breakfast tables were set and food placed showing a well balanced meal—also good and bad examples—one window display was a wise old owl surrounded by the fruits, cereals, etc., needed for a good breakfast. Posters were put in eating places in our gymnasium and eating rooms during our district basketball tournament.

"Pupils wrote letters to their mothers asking them to get them up in time to eat each morning and to please have milk on hand instead of coffee.

"Each two girls took a grade as their special project and worked out lessons, assignments, and talks, then went to the grade rooms during each day and taught a 'breakfast' lesson. Some of the assignments were menus, posters, original stories, and poems, countries from which we get breakfast foods, letters to faraway children telling about one project and how much it meant to them, collections of many kinds of cereals and costs of many of them. These papers were collected and graded by the student teachers and the best put on bulletin boards and in display windows. Tests were given at the end of the period.

"Other projects included the High School bulletin board and county newspaper articles in which stories and pictures of some of those participating were printed.

The Effects Are Lasting

"Although we do not expect to quit our project we have summed up our results on one huge baseball diamond poster on which we have the names of all those who made home runs during the campaign. This poster is being displayed in the Post Office window and shows to the public what can be done by a group of students who are willing to find health problems and find ways of helping to solve them.

"Those who were perfect in each grade in school were served a balanced breakfast in the Home Economics Department by their 'Better Breakfast' teachers and in several cases the entire grade was perfect. This breakfast was the biggest job of all for we had not realized we would be able to get such cooperation, but it was fun to watch 50 eat breakfast at one time and enjoy it as they did. These breakfasts were completed in 3 days. Bread and milk for the breakfasts were donated by local dairies and bread companies. Some of the older students were carried on a trip to visit the dairy which bottles our milk.

Health Needs Are Focused

"We made pictures of all the activities, including preparations, posters, children at work, and results. Of course we will never be able to know just what the final results are, but intend to check occasionally and see how well they are continuing the good health practice started.

"We home Economics students have thoroughly enjoyed this health project. It has made us more conscious of present teen-age food habits and what we can do about them. It has opened the eyes of our parents to see that we need breakfast even more than the baby at home whom they would not dare let miss his milk. Another thing it has done is to make us more alert to our community health problems and realize that something can be done about them if we as a group will study them through as we did this one and not quit until we feel our goal has been accomplished. To many of us this has been the most interesting project we have ever undertaken in school, mainly because we were allowed to discover the problem, to work it out, and then carry it through to our own satisfaction. Thanks to the Woman's Auxiliary, Tennessee State Medical Association, for furnishing the inspiration.

"Some of the major sources of guidance we used were: National Dairy Council, County and State Health Departments, Cereals Institute, Health magazines, Your Health, articles on 'Why Eat Breakfast?' from Reader's Digest, basic seven charts, Seventeen Magazine, and various miscellaneous articles found through working up our lesson plans, merchants who helped to plan exhibits, and peoples' ideas and helps.

"A total of 208 breakfast posters were made. One hundred eighty-six quit drinking coffee (we hope for good). Ninety-six per cent of the pupils checked are now eating breakfast. Contacts were made with parents of the community."

That is the end of this inspiring report. But one more inspiring thing happened. Instead of using the money to take a trip to Washington or New York, the class gave it to their teacher, Mrs. J. W. Roberts, to pay for an electric stove she had bought on "faith" before they learned of the award of the prize.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

A Successful Meeting Recorded—

Doctor, here is your Annual Meeting Reference Number of the Journal. In the pages of this issue you will find a carefully abstracted record of one of the finest Annual Meetings in recent years. While this issue is necessarily short on scientific material, we believe that our four-year-old policy of publishing the proceedings of the Annual Session in one issue is both practical and proper. It is our belief that a large percentage of our members are interested in the "organized" side of medicine and that you will want to know what your Association is doing. You will find the record of an outstanding year in these pages—and you won't have to search through several subsequent issues to find the story. May we suggest that you file this copy in a handy place for ready reference?

Based on Three Themes

This year, another four-year-old precedent was followed in the general plans for the meeting—a meeting built around three themes: EDUCATION, BUSINESS, FUN. The 119th Session lived up to our fondest expectations in these respects.

Education

Education-wise, this Session undoubtedly provided the greatest variety of postgraduate opportunity. This was made possible by the splendid cooperation of the specialty groups who accepted an invitation from the Editor and the Executive Secretary to hold their annual sessions in conjunction with the Association. These specialty sessions greatly augmented and supplemented a splendid series of general sessions.

Cooperation

For the record, here are the groups who contributed so materially to the versatility of the educational offerings of this session:

Tennessee Chapter, American College of Surgeons
Tennessee State Pediatric Society
Tennessee Thoracic Society and the Tennessee Chapter, American College of Chest Physicians
Tennessee Diabetes Association
Tennessee Pathological Society
Tennessee Radiological Society
Tennessee Academy of Ophthalmology and Otolaryngology
Tennessee Academy of General Practice
Tennessee Academy of Preventive Medicine and Public Health

New Specialty Group Organized

In addition to the above organizations, the Tennessee Psychiatric Association was organized during the meeting and will meet in future years with the Association. It is hoped that the Tennessee Orthopedic Society will join these other special groups next year, making this cooperative venture a one hundred per cent success. Every member can look forward with confidence to a versatile, a la carte scientific program in succeeding years.

Business

Business-wise, the meeting was strictly up to par. You are referred again to the "abstracted" abstracts of the proceedings of the House of Delegates and the Board of Trustees published in this issue. These proceedings, along with the abstracts of reports of officers, committees, and the Council, bear eloquent testimony to the virility, alertness and leadership of this Association in the politico-socio-economic aspects of medicine.

Fun

Fun-wise, little was left to be desired. Highlights were the President's Dinner, the President's luncheon, the Jackson Clinic's gala affair honoring President-Elect (now President) John R. Thompson, Jr., the Medical Family Party, and finally the exclusive and delightful FUN NIGHT PARTY at the Plantation Club, sponsored by the Nashville Academy of Medicine, the host society. Added to these scheduled affairs were many smaller and special get-togethers.

Features and Awards

Feature-wise, the President's Night program stood out. Designed to "honor our president", it featured addresses by President A. M. Patterson and President-Elect John R. Thompson, Jr. Special awards at this event included the citation of Dr. Kelly Smythe, Bemis, as Tennessee's Outstanding General Practitioner of the Year; the award of a \$500.00 U.S. bond to Obion High School, the winner of the Health Project Contest; the presentation of the President's Gavel to Dr. Patterson; and the presentation of the Speaker's Gavel to Dr. Charles C. Trabue IV in recognition of his four years' service.



Meeting Briefs

REGISTRATION—713 (612 physicians, 81 exhibitors, 20 headquarters staff and assistants). 27% increase over last year.

132 Woman's Auxiliary members were registered.

Exhibitor revenue—\$5,100.00—an all-time high.

Exhibitor's Liaison Committee performed a superb job—a new approach to exhibitor relations.

Workrooms, fully equipped and manned by headquarters personnel, turned out an amazing amount of work around the clock.



A Note of Appreciation

With this issue of the Journal, your present Executive Secretary bows out as a participant in the production of the Journal. Terminating his more than eight years of employment by the Association on May 31, his deepest gratitude and appreciation goes to every member of the Association. These have been pleasant years—full of work and reward. He has witnessed a continually growing organization achieve a strong position of leadership in its own State and among the fraternity of states composing the American Medical Association. His departing hope is that the present great stature of a fine organization shall continue to grow—meeting its grave responsibilities with courage, alertness, and capacity. Yours is a noble and venerable profession—deserving and rightly claiming your full loyalty and devotion. Give it your best. No less will suffice.

Public Service

THE TENNESSEE TEN

PUBLIC SERVICE . . . THE TENNESSEE TEN

(The House of Delegates of the Tennessee State Medical Association, in approving the official report for the Public Service Committee for the Association year 1953-54, expressed the "hope that every physician in Tennessee will read it." In order that every member of the Association may have this opportunity, if they wish, we are herewith publishing the report in full.—Ed L. Bridges.)

The Public Service Committee devoted most of its time and energy to three major projects during the past Association year. We can report completion of one project, partial completion of another, and definite progress on the third.

As you know, passage of the "Hospital Service for the Indigent Act" was the major accomplishment of the Committee in the previous Association year. But an even larger task remained and that was to extend coverage of this act to 81 Tennessee counties which have made no payments or mere token payments on hospital bills for medically-indigent Tennesseans. Fourteen counties come under the Act automatically because they are making sufficient payments to match state funds under the formula for state-county participation.

The 81 county courts had to be visited, written and otherwise contacted by our headquarters office, doctors and their wives and other people interested in the care of the indigent. A number of state-wide organizations were activated in behalf of the indigent by direct action of the Public Service Committee. A number of the courts have voted to include matching funds in their 1954-55 budgets.

An exhaustive promotional and educational program on the indigent law has been carried out by the Committee through our Public Service Department. The Executive Sub-Committee and our Director have met to work out further promotion, with Dr. R. H. Hutcheson and Dr. Robert C. Berson. The administrator of the indigent law will be selected soon and go to work under Dr. Hutcheson, Tennessee Public Health Commissioner.

Moral and active support has been given to us on the Indigent Law by the Tennessee Hospital Association, Tennessee Farm Bureau Federation, The Tennessee Parent-Teacher Association, Tennessee Association of Medical Social Workers, The Tennessee Association of County Court Judges and the State Public Health Association. At least fifty talks have been made on the Indigent Law throughout the State during the past year.

Our next and final step is to obtain adequate appropriation for medical care of the indigent when the next Legislature meets in January, 1955. The appropriation going into effect July 1, 1954, is \$75,000. This is probably a good thing because we have found such a program will be complex to inaugurate. By the time we receive an adequate appropriation, most of the headaches should be eased. The Committee urges every member of the Association to talk to County Court Magistrates about this opportunity of saving lives. And more important, we MUST contact legislative candidates and strongly urge them to vote for an adequate appropriation. We will apprise every gubernatorial candidate of our purpose and ask them to pledge support.

We believe the House of Delegates would like to know how this program, initiated by this Association, is spreading throughout the country. A total of 32 State Medical Associations and nine big-city Societies have asked for details on the Tennessee Indigent Law. A prepared packet was sent to these Associations and Societies and this usually brought an immediate request for 10 to 25 more packets for each State and City. At least six other states are now planning to ask their next legislature to enact such a law.

We can report a completed project and one that seems to be most effective as a service to the public. This is the series of Free Health Forums sponsored by newspapers and radio stations, Jaycees, P.-T.A's.,

civic clubs, County Health Councils and Farm Bureaus. A total of 42 forums have been conducted throughout the State under auspices of The Public Service Committee and local Society Public Service Committees. Tennessee did not originate this idea but we have tried to improve upon it in the following ways:

1. Tennessee has held more than three times as many forums as any other State within a year. So we have done a good job of covering the population with authentic medical care and public health information.

2. Tennessee is the first State in which the forums have been tried in small and medium-sized cities and towns. The forum centers in Tennessee have ranged from our largest cities of Memphis, Nashville, Knoxville and Chattanooga, to Jackson, Johnson City, Brownsville, Humboldt, Milan and Trenton.

3. Tennessee is the first State in which the forums have been sponsored by organizations other than newspapers and radio stations.

4. A total of 360 doctors have participated, either in the forums, in press and radio promotion or in direct contact with the sponsors. This is approximately one-fifth of the membership of the TSMA, actively participating in a project which directly reaches the people.

Every sponsoring organization, and every medical society involved, has requested that the forums be repeated, with new subjects, as soon as feasible. This we plan to do.

A year ago in Memphis, the Public Service Committee authorized our Public Service Director to explore the possibilities of "house cleaning"—the one job that organized medicine must do. The result of this exploration, as given to the Executive Sub-Committee, by the Director, convinces us of one thing. The only effective job of house cleaning can be done with the aid of a state-wide disciplinary agency, assisting local societies who sometimes find it impossible to clean house. For example, one community had a doctor who at certain times withheld his services from the people. There were only certain times that he would see patients, emergency or not. The local medical society tried, but found it impossible to do anything about it. The Public Service Committee, acting on the State level, authorized the Public Service Director to take steps. The situation has been cleared up, to the benefit of the people and for the good name of the profession. One of our primary projects is extending medical service, around the clock, to all our people.

One medium for house cleaning would be a state law requiring pathological examination of most of the tissues removed from the human body in licensed hospitals. But this would require a state pathology laboratory requiring a staggering budget for operation. Your Committee has studied a confidential report on 16 hospitals in Tennessee in which reports by two pathologists, unknown to each other, disclose normal tissue removed by hysterectomy frequently ran as high as 100 per cent and appendectomy tissue from 40 to 65 per cent consistently. It is encouraging to report that several hospitals have disciplined rigorously or expelled some physicians from their staffs during the past year.

In one area of the State a group of physicians had the courage to call attention to a heavy incidence of caesarean section for "trivial reasons." This report, published originally in the Journal of Surgery, Obstetrics and Gynecology, reached public print. It resulted in putting teeth into the caesarean section rule in several hospitals. A recent study of caesarean sections in that area shows a drop of fifty per cent after publication of the original survey.

The Public Service Committee now operates the Placement Bureau of the Association, finding locations for young doctors and finding doctors for medically isolated communities. Within the past year the Bureau has placed 13 doctors in areas with acute needs and has assisted six communities in obtaining physicians. Four of these communities have voluntarily raised funds to build and equip clinics and give the incoming doctors one to three years' occupancy of the clinics without any rental payments whatever. This is an encouraging trend. The public is beginning to accept the fact that "health is everybody's responsibility."

The Committee has given special assistance to the Woman's Auxiliary, the Committee on Rural Health, the Committee on Legislation and Public Policy, the Autopsy Committee, the Committee on Liaison to Organized Labor and the Committee on Veterans Affairs.

Special assistance also has been given in the field of Nurse Recruitment, and here we would like to make a proposal. The proposal is

(Continued on page 224)

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Headquarters Site Purchased

• A special meeting of the Board of Trustees of the Association was held in Nashville on May 9th for the purpose of hearing and acting upon a report and recommendation of the Property Study Committee. The Association has for some time considered purchasing a site for a headquarters for the State Medical Association. At this year's meeting, the House of Delegates gave its approval for the trustees to proceed with the obtaining of permanent headquarters.

Located in the Hospital Area

• The Property Study Committee has devoted a great deal of time to investigating various properties in Nashville. The Committee recommended the property at 112 Louise Avenue, which is located at the corner of Hayes Street and Louise Avenue, and which was declared the most desirable and valuable location available. A residence is now located on the property; however, plans are to demolish the present building and construct a suitable office building to house the headquarters of the Association.

Will Erect New Building

• The Study Committee was instructed by the trustees to present a detailed floor plan for the proposed building at the November meeting of the Board of Trustees. The Study Committee was also instructed to submit a plan of mutual utilization of the proposed facility by the Tennessee State Medical Association and the Nashville Academy of Medicine.

Plans to Be Presented

Financed from Investment Fund

• The purchase of the property was made from funds contained in the investment account of the Association. The lot space is 60 feet on Louise Avenue and extends 150 feet deep on Hayes Street. The purchase price of the house and lot was \$20,000, which was found to be exceedingly reasonable in comparison with other properties in the area.

New Committee to Aid in Operation of Hospital Indigency Act

• The matter of creating a special liaison committee to the Public Health Council for setting up regulations governing the operation of the Hospital Indigency Act was discussed at the Board of Trustees meeting on April 21st, which immediately followed the concluding session of the House of Delegates during the meeting of the Tennessee State Medical Association. It was the decision of the trustees that the chairman, along with the president-elect of the Association, and the chairman of the Public Service Committee recommend the members of the liaison committee, with the names to be submitted to the Board of Trustees for confirmation. The Hospital Indigency Act goes into effect on July 1st, and it was felt that a number of questions will arise wherein this Association will be called upon for assistance and advice.

Committee Appointed to Study Membership Expansion

• In keeping with the resolution adopted by the House of Delegates in April, 1954, the following committee has been appointed by the Board of Trustees to study methods of expanding the membership of the Association. The following members compose the committee: Dr. John R. Thompson, Jr., Chairman; Dr. Charles C. Trabue, Dr. Walter Hankins, Dr. J. Fred Terry, Dr. S. Fred Strain, Dr. R. H. Kampmeier, Dr. James C. Gardner, and Dr. D. C. Seward. This committee is composed of principal officers of the Association.

Your Chance to Help

• In Clear Fork Valley, an isolated mining area in East Tennessee, there are 3,800 people with no physician or dentist.

The Tennessee Medical Foundation, a non-profit group sponsored by the Tennessee State Medical Association, has been working on this problem for approximately one year.

Clinic Building Procured

• A good building to be used as a clinic headquarters to serve this area has been procured. A committee of local leaders in the Valley have been soliciting funds and free labor to renovate the building. The committee has been assured by the Foundation that when the building is completed the Foundation will help secure medical personnel. Renovations on the building are now about 80 per cent completed.

A young physician and a part-time dentist have agreed to set up practice in the clinic building, the dentist to start on or about June 1st, and the physician on August 1st. One major problem still remains: The Foundation is in need of equipment for the renovated building. The following rooms in the clinic are to be equipped:

Equipment Needed

- 1. An approximately 15 square foot waiting room.
- 2. A receptionist area.
- 3. Physician's office.
- 4. Nurse's quarters.
- 5. Equipment for dentist office.
- 6. Two examination or treatment rooms.
- 7. Conference room.
- 8. X-ray rooms.
- 9. Dark room.
- 10. Laboratory.
- 11. Maternity center.

This is where you, members of this Association, can help. Check through equipment at your disposal, or that which you will be willing to donate to the Clear Fork Community Clinic. Any usable items that you have which would meet any of the above needs will be extremely helpful.

If you can and will help in this project, contact your Executive Secretary or any of the following physicians:

Dr. A. M. Patterson, Chattanooga
Dr. Cecil Newell, Chattanooga
Dr. B. M. Overholt, Knoxville
Dr. Ralph Monger, Knoxville
Dr. J. S. Hall, Clinton
Dr. Daugh W. Smith, Nashville
Dr. R. H. Kampmeier, Nashville
Dr. Robert Berson, Nashville
Dr. John B. Youmans, Nashville
Dr. R. H. Hutcheson, Nashville
Dr. John R. Thompson, Jr., Jackson
Dr. Ernest Kelly, Memphis
Dr. Frank L. Roberts, Memphis

Last Call for Waiver of 1950 A.M.A. Dues

• Members of this Association who might be affected are reminded of the resolution passed at St. Louis by the AMA in December, 1953, with regard to dues. The resolution is as follows:

"RESOLVED, that any active member of the AMA who failed to pay dues for the year 1950, and who was suspended for such delinquency, may be reinstated during the first six months of 1954 by payment of 1954 dues only. Should such an individual fail to pay his 1954 dues by July 1, 1954, he shall continue to be considered delinquent."

Last minute reminders have gone out to those affected.

New Executive Secretary on the Job

• Perhaps you will notice some difference in the style of reporting in this issue of the Journal, inasmuch as your new Executive Secretary is established in office. The organizational news of the Association will continue to be presented to you in an as interesting manner as possible. My pledge to the membership will be constant hard work and the expending of every effort to keep the Tennessee State Medical Association in its present leading position in medicine and wherever possible to improve and extend its services. Your help and counsel on all matters will be appreciated at any time.

Public Service

THE TENNESSEE TEN

(Dr. Luke L. Ellenburg, in his Presidential address to the Greene County Medical Society, emphasized the Public Service theme in the highest tradition. Space prevents publication of the entire address, but we publish below the major point of Dr. Ellenburg's message.—Ed L. Bridges.)

"I have entitled this paper 'A Medical Critique.' It is written with the hope that it will be provocative of ideas and will lead to open expression of these ideas by some of you.

"During the first two decades of my life, there was built up in my mind a fine and noble concept of what every physician represented, by virtue of his being a member of his profession. A physician, in my mind, was a man of both great character and great learning who spent much of his time, means, and energy in acquainting himself with the scientific facts of medicine and who, in turn, administered his art to his patients in a manner that was unquestionably correct because it was based upon the most modern scientific facts. He was, it seemed, a man respected by all who knew him, both outside his profession and within it. He was a man whose presence in a room where sickness existed meant reassurance and comfort to the family and to the patient. It was concepts such as these that gave me the desire to become a member of this great profession. During my third decade, as I finished college, attended medical school, and served my internship and residency, it was my pleasure to feel that I was associated with a community of scholars seeking truth in so far as scientific medical knowledge had progressed, up to that time, and thus my previous concepts were strengthened.

"After my tour of duty in World War II, I entered the field of active practice of medicine. It was then that I began to experience how medicine, as a whole, was being practiced in this and other communities; and with some regret, I must say, it was then that some of my preconceived ideas began to undergo some drastic alterations. The reasons for some of these alterations I now wish to discuss; but before discussing them, let me confess that I have no intentions of projecting myself before you as an example of perfection (even though my inability to do this exists in spite of considerable effort to attain that goal); and if you hear glass flying as I read this paper, remember that I appreciate some fresh air in my own glass house.

"So much then for non-specific generalities. Let us now consider some specific and concrete problems, the first of which is the use and misuse of antibiotics.

"Let us consider some well-known opinions and facts about antibiotics and bacteriology. During the time of the evolution of man, there was also an evolution of a microbiological flora which exists in nature in a complex balance. This generally exists without producing injury or disease to man. Gram-negative and gram-positive bacteria, fungi, and yeast exist all about us, and each group seems to keep the other in check. When one of these is removed by an antibiotic and this delicate balance is upset, the other may grow without restraint and produce disease. For example, several cases of enterocolitis have been reported, which resulted in death, and were caused by staphylococcus aureus, in patients who had been given antibiotics which upset the normal intestinal flora. Fungus infections are thought to be increasing. Autopsy reports are appearing in which Monilia are found in many internal organs. Thrush is no longer a disease only in the woman's vagina and the infant's mouth. More infections due to gram-negative bacilli, such as Pseudomonas aeruginosa or Friedlander's bacillus, are being reported. It is thought that the use of antibiotics which tend to kill off the gram-positive bacteria, sets the stage for free growth of these gram-negative organisms in their hosts. Good examples are those children who have fibrocystic disease of the pancreas and who usually succumb to infections caused by gram-negative bacilli after extensive antibiotic therapy, or the newborn with Pseudomonas septicemia whose mother received penicillin during the last days of pregnancy or the infant itself was treated with penicillin during the first days of life.

"Bacteriologists generally agree that the best way for bacteria to become resistant to many lethal agents is by subjecting those organisms to growth in an environment with a sublethal concentration of that agent. Many strains of staphylococci, in fact 50 to 75 per cent in some reports, have become highly resistant to penicillin. Reports of resistance of other strains of bacteria are commonly seen in present day medical literature.

"There is always present with us the possibility of the patient developing a sensitivity to a drug in use. This is true in the case of antibiotics and especially so with penicillin. These reactions may vary from mild and transient reactions to severe and totally disabling reactions of long duration. It seems to me that the incidence of reactions is increasing.

"We have not spoken of the large group of disease producing viruses. There are many, and much investigative work has been done in treatment of these diseases with the various antibiotics. There seems to be universal agreement among men of authority on this subject, that the antibiotics are absolutely ineffective against diseases of virus etiology, with the exception of some cases of virus pneumonia and some of the larger viruses of the lymphopathia-psittacosis group. This then leaves a large group of virus diseases for which the antibiotics thus far used are ineffective. In this group lie the common cold and a whole spectrum of upper respiratory virus diseases, including influenza. It is this group of diseases in which there is the widest use, or better stated, misuse of antibiotic drugs.

"All the above statements are given not merely as my ideas but as facts arising from the works done by medical scientists under carefully controlled conditions.

"If these are facts, and we as men of science are obligated to accept them as facts, why are antibiotics used so widely in the treatment of the common cold and the other minor upper respiratory infections? Why is it so common for patients to come in and say, 'Doctor, I am taking a cold, or I have a cold, and I want a shot of penicillin for it'?

"I have heard several reasons given by physicians as answers to those questions. These I shall enumerate and discuss as follows:

"1. 'If I don't give it, someone else will.'

"In analyzing this reason, three conclusions can be drawn. In the first place, such a statement is an indirect confession by that doctor that he is using the drug indiscriminately; secondly, it is a confession of his own inability to hold his patients on treatment advocated by the best medical authorities of our time; thirdly, it implies a fear that he will lose his patient by practicing scientific medicine, and that his patient will be taken in by the next doctor who does not base his treatment on scientific knowledge. I would like to say here and now that if every doctor would base his choice of treatment for this group of diseases upon scientific knowledge found in any modern textbook of medicine or in any modern medical journal, there would be no indiscriminate use of these drugs; there would be an equality of therapeutic ability for these diseases, and there would be no fear of losing one's patients to someone else because of the therapy he might use. Such reasoning as this number one does not have origin in reason, is solely lacking in logic, and makes mockery of the scientific method.

"2. 'Penicillin is good prophylactic treatment in these respiratory virus diseases when the WBC is low.' Now it is common knowledge that when these virus diseases are present the total WBC and polymorphonuclear count are usually low. This does not mean, however, that if bacterial invasion should occur the hematopoietic system will not respond with the production of adequate numbers of polys. To give all these patients antibiotics is like a hunter shooting all his ammunition into the depths of the jungle without aim and without target, hoping to hit a wild animal, when the logical thing would be to await the appearance of the animal in full view, then fire with the proper ammunition from the proper range until the animal is subdued. Prophylactic you may say? Prophylactic against what? Only about three to five per cent of these infections fail to recover without complications when given symptomatic treatment. The great wastage of antibiotics then on the other 95 to 97 per cent, along with the useless expense to the patient, the risk of drug reactions, and the danger of developing resistant strains of bacteria, hardly justifies the use in all these cases. If one should give antibiotics just because the WBC is low, then practically every virus infection should be given this treatment, including mumps, infectious hepatitis, chicken pox, and almost all the other viruses. I challenge you to show me a report in any medical literature, that has stood the test of time, which advocates antibiotics for all virus diseases.

"3. 'It is good psychological treatment to give a shot.' To this reason let me ask this doctor if he is truly being intellectually honest with his patients? It seems to me that giving injections for the spectacular aspect of the method is helping to perpetuate a hoax and is to be severely condemned.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Insurance Committee Holds Two Important Meetings

• Two important meetings of the Executive Committee of the Prepaid Insurance Committee of the TSMA were held recently. The first was in Nashville on April 17th with the Executive Sub-Committee and representatives of three specialty groups, Anesthesia, Radiology and Medical Care Specialties, present. In addition, were representatives of the Sub-Committee for Tennessee of the Health Insurance Council. Members of the Health Insurance Council represent the thirty-six underwriting companies of the Tennessee Plan. The purpose of the April meeting was to hear reports from the three Sub-Committees representing the specialties relative to the inclusion of these specialties in the Tennessee Plan. The Pathologists also requested that their specialty be included in any program for expansion of the Plan.

Study Committees of Four Specialties Present Suggestions

• A great deal of information was made available to the Executive Committee. The report of the Study Committees on Anesthesiology, Radiology, and Medical Service was accepted for study.

Duplication in Policies

• The second meeting of the Executive Committee was held in Nashville on June 23rd. The purpose of this meeting was to consider two important matters. The first was to determine what action should be taken with reference to the resolution presented to the House of Delegates at the TSMA meeting in April. The resolution dealt with patients now holding other policies in addition to the Tennessee Plan, and wherein, patients received insurance benefits in excess of the participating physicians fee allowance.

Can the Tennessee Plan Be Expanded?

• The second matter discussed was preliminary talks on how the specialties of Anesthesiology, Medical Service, Radiology and Pathology could be included into the Tennessee Plan.

Physicians Believe Duplication in Policies Increasing

• Physician members of the Executive Sub-Committee pointed out that frequently it had been found that patients had more than one insurance policy. Duplication in policies was discussed at considerable length by the Committee and the members of the Health Insurance Council. The Council representatives stated that they believed that duplication represented a small percentage of the total number of policies covered under the Tennessee Plan or other surgical insurance policies. It was believed that not more than 5% of the total people covered would have more than one policy.

Patients Benefit Financially from Doctors Services

• Dr. N. S. Shofner, Chairman of the Executive Sub-Committee, pointed out that physicians resent very much their patients making money from doctors services. Discussions were presented concerning the possibilities of pro-rating the cost where patients held more than one policy. However, experience in other states and that of the insuring companies has shown that such procedures did not work satisfactorily.

Several Problems Exist

• In trying to arrive at a solution to this problem, it was pointed out that two major points should be considered. One was the fact that the Medical Association has a grave doctor problem on its hands; and the other is the public relations factor concerning the doctor and the insurance companies.

Duplication Study to Be Made

• In order to determine how much duplication existed, the insurance committee moved that a nation-wide survey of "doctor sponsored" plans be made and the results accumulated for submission to the Committee at a later date. One of the insurance company representatives agreed to make such a study.

Expanding the Tennessee Plan Discussed

• Preliminary discussions were held on how the additional services of Anesthesiology, Medical Service, Radiology and Pathology could be included in the Tennessee Plan. It was thought that if these additional services could be included, they should be added as "Riders" to the present plan in order that the original plan would not be disturbed, thus eliminating the necessity of reissuing any of the original policies. It was determined by the Committee that consideration be given to a deductible rider type of policy covering benefits in the specialties being studied. A survey is to be made on this matter.

Cost High

• Representatives of the Health Insurance Council pointed out that very few policies of this type were being sold due to the high cost.

TSMA Active on the Legislative Front

• This Association, its officers and especially the Committee on Legislation were very active in the recent Social Security Bill before the House of Representatives in Washington. Telegrams and telephone calls from the Legislative Committee, the President of TSMA and other officers, went directly to the Tennessee members of the House Ways and Means Committee urging that doctors be excluded from the Social Security measure. A great deal of work was exerted on this project, and the bill was voted 15 to 10 in Committee to exclude doctors from Social Security. The passage meant a reversal of previous action since the Ways and Means Committee had originally passed the measure including physicians under Social Security.

TSMA Thanked for Assistance

• The Washington office of the American Medical Association telegraphed thanks and congratulations to this Association for the important action taken in regard to the Social Security Bill.

Medical Exhibitors Rate 1954 Meeting Much Improved

• The State Meeting in 1953 obtained a rather poor rating by the Medical Exhibitors Association from the standpoint of factors governing the meeting from the exhibitors point of view.

I am glad to report that many of our bad points were overcome in the 1954 meeting. The Medical Exhibitors Association carefully analyzes every session at which it is in attendance, and evaluates the meeting based upon certain basic requirements. The following is a report showing exactly how we fared with the exhibitors in 1954.

Evaluation Report

• EVALUATION REPORT OF THE ANNUAL MEETING IN NASHVILLE OF THE TSMA BY THE MEDICAL EXHIBITORS ASSOCIATION....Thirty-five exhibitors reporting.

General Information:

1. Service and lighting was rated Good.
2. Charges for special service was stated as Reasonable.
3. Intermissions to visit exhibits was Adequate.
4. Exhibit Hall was Not obstructed in any way.

Individual Rating by Exhibitors:

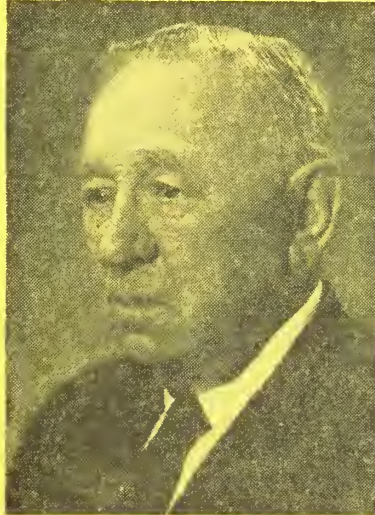
Item	Good	Rating	
		Fair	Poor
Suitability of City.....	28	6	1
Suitability of Exhibit Hall.....	7	20	8
Hotel Accommodations.....	23	2	1
Physicians interest in exhibits.....	21	12	2
How was flow of traffic in exhibit hall?.	17	15	3
Sales of products.....	4	6	5
How was this meeting classified?.....	21	13	1

Public Service

THE TENNESSEE TEN

More Doctors Are Needed in Legislature

NEW SENATOR



Dr. T. R. Ray

• Doctor T. R. Ray of Shelbyville, former President of the Tennessee State Medical Association, is rendering public service to the profession by running for the State Senate. He will be the next Senator to be installed at the January, 1955, Session. Dr. Ray has no opposition in the District where he has served as physician and full-time citizen for so many years.

Dr. Ray, retired from active practice last year, is a long-time and very active member of the TSMA Committee on Public Policy and Legislation. This gives him added qualifications for the office of State Senator. He was qualified for the nomination by many friends who signed a long petition and entered his name. He will represent Bedford, Moore and Coffee Counties.

Doctor John H. Gammon of Knoxville was the only physician in the 1953 General Assembly. Doctor Gammon made an excellent record and was author of an important bill designed to curb the spread of tuberculosis in Tennessee.

In Williamson County, Dr. James O. Walker of Franklin is one of the candidates for Direct Representative. The Primary Election is August 5th.

Fee Splitting Is Assailed at 'Frisco

• Fee splitting, frequently discussed in the professional and lay publications, found firm opposition in the A.M.A. House of Delegates at its recent session in San Francisco.

The House adopted a judicial council report which included the following statements:

"The Judicial Council is of the opinion that the only new facet concerning this subject that has come up recently is the case of joint billing to some of the non-profit insurance companies. In many cases these insurance companies insist on a joint or combined bill, but the bill is being paid in most instances by two checks. This is not considered unethical and all insurance plans which do not pay the individual physician in this manner should be urged to do so.

"The Judicial Council is still of the opinion that when two or more physicians actually and in person render service to one patient they should render separate bills.

"There are cases, however, where the patient may make a specific request to one of the physicians attending him that one bill be rendered for the entire services. Should this occur it is considered to be ethical if the physician from

whom the bill is requested renders an itemized bill setting forth the services rendered by each physician and the fees charged. The amount of the fee charged should be paid directly to the individual physicians who rendered the services in question.

"Under no circumstances shall it be considered ethical for the physician to submit joint bills unless the patient specifically requests it and unless the services were actually rendered by the physicians as set out in the bill."

The subject of fees came up again in the address of Dr. Edward J. McCormick of Toledo, retiring President of the A.M.A. He called on the profession to take the guesswork out of medical costs by adopting average fee schedules on an area or regional basis. He said that without such a plan, voluntary health insurance programs would become "just a sham."

Following Dr. McCormick's address, the Reference Committee on the Reports of Officers suggested that the Board of Trustees make a study of average fee schedule programs where they are already in operation, and the House approved.

TSMA Has Negro Members

• Two Negro physicians have been admitted to the Giles County Medical Society with full rights and privileges.

This action automatically makes the Negro doctors members of the Tennessee State Medical Association and the American Medical Association.

The physicians are Dr. D. M. Spotwood, 47, graduate of Meharry Medical College, practicing in Giles County since April 11, 1944, and Dr. William A. Lewis, Meharry graduate of 1907. The Giles County Medical Society issued this statement:

"They were admitted on the basis of education, training, experience, standing in the community and the excellent job they are doing for our colored people."

Dr. John R. Thompson, Jr., of Jackson, President of the Tennessee State Medical Association, said the TSMA Constitution did not contain any restrictions concerning the race of members and added that this had never been a bar to Negro physicians becoming members.

"The only way they can come in is through one of the component local societies, just as all of our members have entered the State Association," Dr. Thompson added.

Fine Offers, Few Takers

• Tennessee towns and rural communities are awakening to the responsibility that health and medical care is everybody's business.

Several medically isolated towns are making attractive offers to physicians willing to enter practice in these doctor-short areas.

One county court voted \$25,000 to build a clinic and another \$10,000 to equip it. The clinic and equipment are offered to two physicians and a dentist without any rent or service charged for equipment for three years.

One small town has agreed to spend \$12,000 on a new building and \$5,000 on equipment, offering the same three-year breathing spell for the doctor.

Still another small town agreed to put money in the bank for the doctor and renovate a building, with the same rent free offer.

In spite of these and other similar offers, there are few takers. No such offers were made 15 and 20 years ago.

*From the
Executive Secretary*

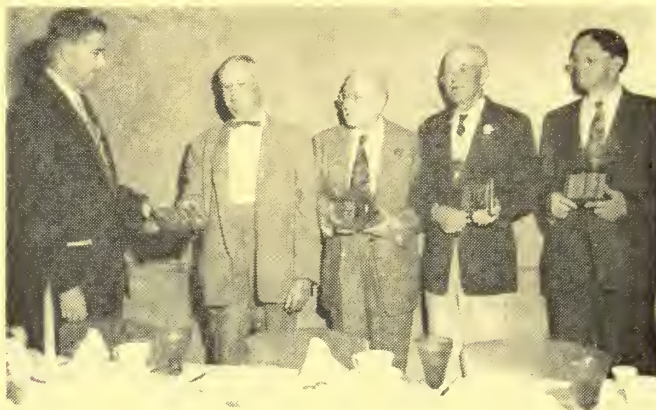
ORGANIZATIONAL NEWS

Four TSMA Members Honored for Long Public Service

• Four members of the Tennessee State Medical Association were recently honored in Kingsport, for completion of fifty years in the practice of Medicine.

The photograph at right pictures Dr. John Powers presenting plaques to Drs. E. W. Tipton, T. B. Yancey, A. M. Wallace and A. D. Miller. At a dinner held at

Ridgefields Country Club, Kingsport, the veteran doctors were presented with scrolls in the form of an open book mounted on a wooden base. It was estimated that the four veteran physicians had treated more than 50,000 patients, often in the early days under extreme difficulties. The Journal of this Association adds its congratulations and continued good wishes to these four honored physicians.



From Left to Right: John Powers, M.D., Kingsport, Master of Ceremonies; E. W. Tipton, M.D., and T. B. Yancey, M.D., both of Kingsport; A. M. Wallace, M.D., Gate, City, Va.; and A. D. Miller, M.D., Kingsport.

Resume of the AMA House of Delegates Actions—San Francisco

• Fee Splitting, osteopathy, closed panel medical care plans, veteran's medical care and the training of foreign medical school graduates were among the major subjects of discussion and action during the sessions of the House of Delegates at the American Medical Association's 103rd Annual Meeting June 21-25 in San Francisco. A brief commentary on the principal actions taken may be of interest to those who have not had access to other sources of information.

Veterans Medical Care

• The Reference Committee on Insurance and Medical Service reaffirmed the policy established at the 1953 Annual Meeting on non-service-connected disabilities. In considering two resolutions condemning the present practice of establishing service-connection by "legislative fiat," the report states, "It is the opinion of the Committee that the time is at hand when the A.M.A. and its component societies should go all out in preventing this unscientific method of determination of service-connected disabilities."

Fee Splitting

• The Reference Committee on Miscellaneous Business accepted the report of the Judicial Council and reaffirmed the former opinions of the House opposing "fee splitting, rebating or payment of commissions in any guise whatever." Reference was made to joint billing of some non-profit insurance companies. However, most of these companies are issuing individual checks and all were urged to do so. The Council ruled that when a patient has had the services of more than one physician and specifically requests one bill stating the services rendered by each physician and the fees charged. "The amount of the fee charged should be paid directly to the individual physician who rendered the services in question."

Osteopathy and Medicine

• The report of the Committee of the Board of Trustees was adopted by and incorporated in a supplementary report of the Board of Trustees. The report recommended "on campus" inspection and study of osteopathic schools, if approved by the American Osteopathic Association, the Committee being continued and to report to the House in December, 1954.

Closed Panel Plans

• Much interest and discussion was caused by the so-called "New York Resolution," one paragraph of which stated: "It should be understood that any medical care plan, company or organization which advertises for subscribers and directs such subscribers to a restricted panel of physicians for medical care is advertising for the benefit of the physicians involved. The Reference Committee on Miscellaneous Business recognized that "Clarification and Interpretation of the Principles of Medical Ethics in relation to prepaid medical care plans are desirable." The House of Delegates approved the request of the Committee that the Judicial Council study the relationship of physicians to Medical Care Plans and the ethics involved, and report to the House at the Annual Meeting in 1955.

Evaluation of Graduates of Foreign Medical Schools

• Much of the time in the hearings of the Reference Committee on Medical Education and Hospitals was devoted to this problem. Realizing the threat to our own graduates and the standard of medicine in this country imposed by the completion of these poorly educated and prepared graduates the Reference Committee referred the problem to the Council on Medical Education and Hospitals for further study and report at the 1954 Interim Session.

Registration of Hospitals

• The House approved discontinuing Registration by the Council on Medical Education and Hospitals and recommended this service be transferred to the Joint Commission on Accreditation of Hospitals.

Registration Total

• The final registration total for the San Francisco meeting was expected to reach approximately 35,000, including more than 12,000 physicians.

Civil Defense Course

• The office of Civil Defense, Health Services and Special Weapons Division of the State of Tennessee has released the final figures on the number attending the basic eight-hour course in Medical Aspects of Atomic Warfare. Total physicians registrations for the course was approximately 300. Those physicians attending at least 50% of the time allocated to the courses have already been forwarded certificates showing completion of the course. The TSMA and the Office of Civil Defense for Tennessee sponsored and presented the course. The lectures were held in representative cities in the respective areas of the State.

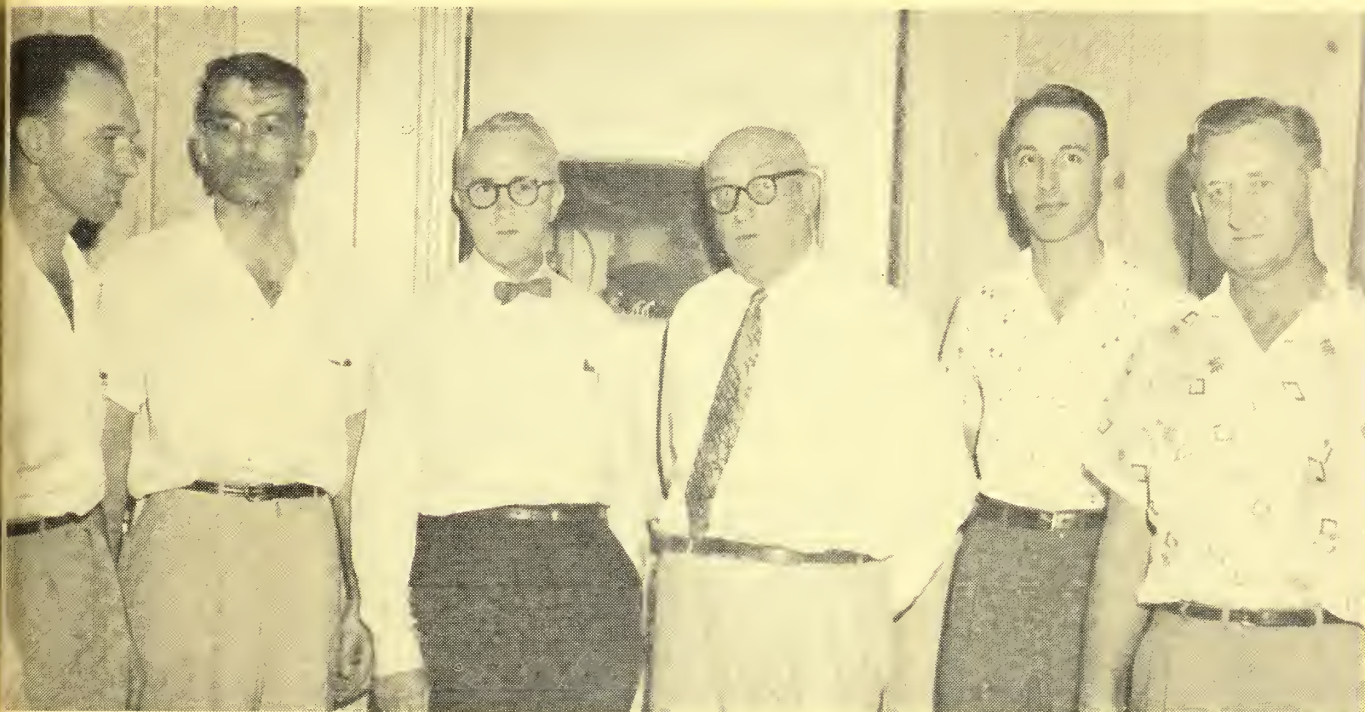
Tennessee Medical Foundation Project Moving to Completion

• The Clear Fork Community Clinic, at the mining village of Valley Creek, Claiborne County, has begun operation with the opening of a dental office. The Community Clinic is the first project of the Tennessee Medical Foundation to bring health care to marginal areas throughout the State. The Tennessee Medical Foundation was created and is sponsored by this Association. A physician will begin the practice of medicine at the Clinic in August. A Public Health Nurse will be assigned to the Clinic to work with Clear Fork Valley's eight hundred or so families under a cooperative plan worked out with the State Health Department. The State Health Department of Tennessee, physicians, and dentists have supplied some of the equipment for the Clinic Building, a 70 x 40 stone structure leased by the Foundation at a nominal sum from Pruden Coal and Coke Company. The Foundation will purchase other needed items. Other Health Care projects now receiving Foundation attention include the construction of a 43-bed municipally-owned hospital in La Follette, construction of a clinic building at Wartburg, and work in the Whitwell-Palmer area of Marion and Grundy Counties.

Public Service

THE TENNESSEE TEN

*Five-County Society Honors Two Tennessee
Physicians For Their Distinguished Services*



The Five-County Medical Society, a spirited and solid organization, staged a surprise testimonial meeting in honor of Dr. Harrison H. Shoulders of Nashville and Dr. John T. (Tom) Moore, Sr., of Algood at Livingston on the evening of July 15.

Dr. Moore was unable to attend the meeting because of critical injuries received in an automobile accident. Another long-time member of the Society, Dr. W. A. Howard of Cookeville, was critically injured in the same accident. Both men are progressing satisfactorily.

The picture above shows, from left to right, Dr. John T. Moore, Jr., Dr. D. W. Mattson, Jr., of Cookeville, Secretary-Treasurer of the Society, Dr. C. B. Roberts of Sparta, Originator and Master of Ceremonies of the testimonial, Dr. Shoulders, Dr. Charles Mitchell of Sparta, and Dr. Frank Sidwell of Livingston, President of the Society.

Dr. Shoulders was lauded for the fight he has carried on to make the VA Medical Care Program fair, efficient and more economical. He started this fight in 1931 and an officer of the A.M.A. said this month, "If the A.M.A. had listened to Dr. Shoulders at that time, the V. A. Medical Care Program would be an excellent one today. Dr. Shoulders was 25 years ahead in his thinking."

The meeting was a complete surprise to Dr. Shoulders and he was obviously touched by the tributes paid him by Dr. Roberts, Dr. D. W. Smith and Dr. C. M. Hamilton of Nashville and Dr. L. A. Killeffer of Harriman. The former A.M.A. President recounted some of his recent efforts to gain action on the Tennessee Resolution and serve notice that he was only beginning to fight. Those who know him well know that this is true.

The special tribute to Dr. Tom Moore for his able and faithful service to organized medicine in Tennessee was voiced by Dr. T. M. Crain of Monterey. He has served the State Medical Association as a member of its Council and was the first to receive the T.S.M.A. Award for "Outstanding General Practitioner of the Year." Doctor Moore

is the living symbol of a man who believes in keeping abreast of the advances of medical science. He is faithful in attending postgraduate courses throughout the state and has served to stimulate interest in PG education.

Rural Health has always been a special interest of one member of the Public Service Committee, Dr. William N. Cook of Columbia. He is Chairman of the Rural Health Committee of T.S.M.A. Dr. Cook, Mr. Woodrow Luttrell, Assistant to the President of the Tennessee Farm Bureau Federation, and the Public Service Director attended the Annual Rural Health Conference conducted by the Arkansas Medical Society in Little Rock last month.

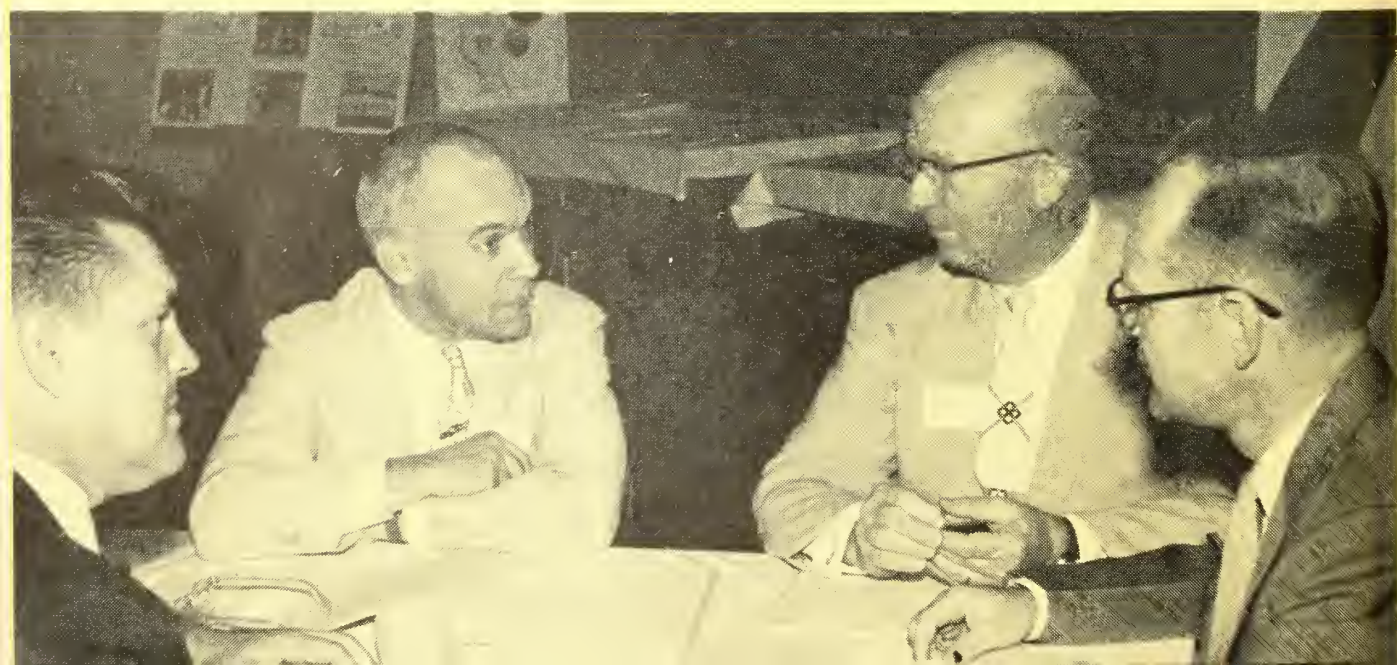
The first Annual Rural Health Conference of the T.S.M.A. is being planned now, to be held next May about one month following T.S.M.A. convention. Such a Conference brings together the medical profession, farm bureau people, Extension Service workers and public health personnel in a one-day meeting to discuss and seek solutions to Rural Health problems.

Dr. Cook has given me permission to announce that he has accepted the position of Public Health Officer for Maury County, effective August 1. This will broaden his opportunities to implement the work of the Rural Health Committee, as well as his work on the Public Service Committee.

The Farm Bureau and the Extension Service both were big factors in the success of the Arkansas Rural Health Conference. Approximately 500 persons attended and participated in the open forum session. In some respects, it was a "bigger" meeting than the National Rural Health Conference. Mr. Luttrell of the Tennessee Farm Bureau and Dean J. H. McLeod of the UT College of Agriculture and Extension Service have indicated that their organizations would like to join the TSMA in promoting and conducting the Rural Health Conference in this State next year.

We need to put considerably more emphasis on our efforts to extend medical care to the rural areas. Chief complaints received in the State Headquarters deal with the lack of doctors, nurses, dentists, public health personnel and facilities in the rural areas. Most everyone agrees that while there may not be a real shortage of doctors, there certainly is a maldistribution. The Placement Bureau operated by the Public Service Department is making every effort to solve the problem of medical manpower shortage in rural areas.

While in Arkansas, we found considerable interest in the activities of the Tennessee Medical Foundation. Mr. Winthrop Rockefeller has evidenced a philanthropic interest in helping the Arkansas Medical Society to solve medical manpower shortages in some isolated areas of that State. The picture below depicts a conference on this subject in Little Rock. Those conferring are, left to right, Mr. Luttrell of the Farm Bureau, Dr. Hayden Nicholson, Dean of the University of Arkansas School of Medicine, Mr. Aubrey Gates, Field Director of the A.M.A. Rural Health Committee, and Dr. Cook. A full page newspaper article on the TMF activities in the Clearfork Valley and the Wartburg area, both in Upper East Tennessee, appeared in a recent Sunday edition of the Knoxville News Sentinel. The caption on the article read: "Medical Care for Isolated East Tennessee Communities is TSMA Project That May Set Pattern for U.S."



*From the
Executive Secretary*

ORGANIZATIONAL NEWS

M E D I C O — L E G A L C L I N I C S		
CHATTANOOGA	JACKSON	KNOXVILLE
October 21, 1954	November 2, 1954	November 11-12, 1954
Interstate Building	New Southern Hotel	College of Law University of Tennessee

JOHNSON CITY	MEMPHIS	NASHVILLE
Date to be an- nounced	Date to be an- nounced	November Date to be announced

Purpose of Medico- Legal Clinics

- One of the chief purposes of the joint committee (Medico-Legal Liaison Committee) of the Tennessee State Medical Association and the Tennessee Bar Association is to make available a means through which mutual problems of doctors and lawyers can be presented for discussion. The real purpose of the medico-legal clinics will be to present in layman's language a series of illustrated lectures and case studies integrating legal and medical findings in personal injury cases. Emphasis will be placed upon the fundamentals of anatomical structure, the physiological basis of specific symptoms and the medico-legal evaluation of particular disabilities.

Six Locations Selected for Holding Clinics

- The Committee has selected six locations covering all areas of the state in which the Medico-Legal Clinics are to be held. They are Memphis, Jackson, Nashville, Chattanooga, Knoxville and Johnson City.

Question-Answer Periods

- Another purpose of the clinics is to present to lawyers and doctors subjects of importance to both groups, at the same time giving an opportunity for discussion and a question-answer period wherein problems can be ironed out and differences discussed.
- At the organizational meeting of the Medico-Legal Liaison Committee, one of the chief complaints registered was that physicians refused to attend court or to give depositions. It has been shown, however, that such refusals were few.

Physicians and Attorneys Surveyed for Program

- The Chairman of the Medico-Legal Liaison Committee, Dr. George K. Carpenter, of Nashville, discussed with representatives of the medical profession and the bar association the type of program that should be presented. Doctors were asked, "What do you want to hear lawyers talk about?" Lawyers were asked, "What do you want to hear doctors talk about?" With the answers to these questions, a tentative program was outlined for presentation covering the following six titles:

Here Is the Program

- Discussed by
- (1) The Medical Witness.....One Attorney and
One Physician
Under this subject it was suggested that the attorney speak along the lines of the following: "The Attorney's Responsibility to His Client in Getting Medical Reports, Depositions, and Court Testimonies."
The physicians suggested topic on this subject would be to discuss along this line: "The Physician's Responsibility in Medico-Legal Medicine."
 - (2) Medical Investigation and Preparation for
Trial.....One Attorney and
One Physician
 - (3) The Evaluation of Back Injuries.....Physician

- (4) Traumatic Neurosis and the Malingeringer...Physician
- (5) Discussion of the Workmen's Compensation Law in the State of Tennessee.....Attorney
- (6) "How Is the Case Settled with Reference to a Digit, an Extremity or the Body as a Whole After the Percentage of Disability Has Been Agreed Upon?".....Attorney

Arrangements Discussed with Leaders of Medicine and Law

• The above is only a broad outline and subject to change to meet local needs. The arrangements for holding medico-legal conferences has been worked out between the local medical society and the local bar association in the six cities where the conferences are to be held. The Executive Secretary has discussed the conferences with the president and secretary of the medical societies in the respective areas, and also discussed the presentation of the program with the president of the local bar associations.

Doctors from All Areas Have Opportunity to Attend

• It is planned that all members of the TSMA will be notified concerning the clinics, and also announcements will be made through the Journal and a special letter will be sent to secretaries of all societies near the centers where the clinics are to be held. Respective local Bar Associations will follow the same plan as it relates to lawyers. In this way doctors and lawyers from the entire area near the six cities selected will have an opportunity to attend the medico-legal conferences.

Knoxville Clinic to Cover Two Days

• The Knoxville program will be somewhat different from the one outlined above. The Knoxville Academy of Medicine, the Knoxville Bar Association and the University of Tennessee College of Law will co-operate in presenting the clinic at the time of the 15th Annual Institute of the College of Law. This will be a two-day program on November 11 and 12 and will cover a much broader field than the proposed clinics for other areas. However, it is believed by the committee that better attendance can be obtained by presenting the clinics on a part day and evening basis.

Other Sessions to Cover Part Day and Evening

• It has been suggested and adopted in several of the selected cities that the clinics will begin in the early afternoon on the date selected, and are to be interrupted by a "dutch" dinner and concluded with an evening session.

Local Society Presidents to Preside

• The president of the local medical societies where the meetings are to be held will select the four physicians who will participate in the discussions and the president of the local bar association will in like manner name the four attorneys who will participate. The president of the local medical society and the local bar association will share the responsibility of presiding at the sessions.

Plans Being Completed

• Dates have been selected for the holding of the clinics in Chattanooga, Jackson, and Knoxville. A November date yet to be selected is soon to be announced by those arranging for the clinic in Nashville. Johnson City and Memphis are completing plans and the dates for holding the conferences in these cities will soon be announced.

Support Excellent-Need Important

• Enthusiastic support has been indicated from every quarter, among lawyers and doctors as to the need and possibilities for holding joint conferences. Conducting a question and answer period at the conclusion of each paper presented will give both physicians and attorneys the opportunity to ask questions that they have had in mind for a long time. It will afford the opportunity to "get off your chest" any medico-legal problem. Everywhere that doctors and attorneys have been informed about the proposed meetings, it has been stated that the need for such a conference has existed for a long while and they welcome the joint session.

More detailed announcements will be forthcoming and you will be receiving additional information from your local medical society concerning the conferences.

Doctors Should Plan to Attend

• Since many doctors have an interest in these subjects, you will no doubt want to include the medico-legal clinics in your schedule.

Public Service

THE TENNESSEE TEN

(The regulations published below will affect, at one time or another, virtually every practicing physician in Tennessee. These rules were first submitted to the Executive Sub-Committee of the Public Service Committee of TSMA. Several changes were suggested and accepted and then the Attorney General approved this final and legal draft. It is hoped every doctor will read and keep this material in his desk.—Ed L. Bridges.)

Rules and Regulations Governing Hospital Service For the Indigent of The Tennessee Department of Public Health

- The 1953 Legislature of the State of Tennessee enacted Public Chapter No. 125 which is an act establishing a service within the Division of Medical Care to be known as "Hospital Service for the Indigent." The purpose of which is to provide hospitalization for medically indigent persons who are residents of the State.
- The Legislature appropriated out of the General Fund of the State of Tennessee the sum of Seventy-Five Thousand Dollars (\$75,000) for the ensuing biennium to be expended after July 1, 1954, and before June 30, 1955, or such part thereof as may be needed to match the participating counties' part, for the purpose of carrying out the provisions of this Act.
- The Law provides that rules and regulations governing the operation of the program shall be promulgated by (the Commissioner) and with the approval of the Public Health Council.

RULES AND REGULATIONS

- The Act creating this service within the Division of Medical Care in the State Department of Public Health will be known as "Hospital Service for the Indigent." (Section numbers in parenthesis refer to section numbers of Chapter No. 125, Public Act 1953.)

- REGULATION 1—(SECTION 7-A). Screening committee for each County in the State participating in the program of Indigent Hospitalization shall consist of three persons—namely:

1. Representative of the medical profession; 2. Representative of the County Court; 3. Representative of the general public.

These committee members shall be nominated by the County Court. Appointment shall be by the Commissioner of Public Health with approval of the Public Health Council. The first committee members being appointed in such manner that one will serve for one year, one for two years and one for three years and thereafter appointments shall be for three years each. In the event of a vacancy occurring on any committee appointments shall be made from nominations submitted by the County Court to fill unexpired terms. No member shall be appointed by the Commissioner whose name does not appear on the list submitted by the County Court in the County in which the committee members reside. The County Court in submitting nominations to the Commissioner of Public Health for members of the County Screening Committee shall nominate at least twice the number to be appointed, listing the members in order of preference. The applicant's physician shall be an advisor to the local Screening Committee. He shall advise the committee regarding the applicant's needs for medical care and answer such questions as the committee may find necessary in making a determination on the applicant's case. Forms will be provided by the State Department of Public Health for the use of the applicant in submitting his request for admission to the hospital under this act.

- REGULATION 2—(SECTION 7-B). The formula to be used as the basis of the allotment of the funds appropriated by the State for this service shall be as follows:

- A. Maximum joint participation program for each county equals:

$$\text{Population of county} \quad \times \quad \frac{\text{Maximum available for program}}{\text{Population of state}}$$

In accordance with Section 7b, Chapter 125 of Tennessee Public Acts of 1953, the state appropriation shall constitute not more than sixty per cent (60%) of the maximum program.

B. Appropriation required from each county equals:

Equalized assessed property valuation of county as published by Tennessee Taxpayers Association	X	Total amount required from all county funds Total equalized valuation for the state
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Total amount required from all county funds shall be equal to forty per cent (40%) of the maximum program.

C. State Allotment to participating county equals:

Maximum joint participation program for county	{	—	{	Appropriation required from each participating county
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● REGULATION 3—(SECTION 7-C). Criteria for acceptance of participating hospitals. No hospital shall be eligible to participate in the Hospital Service for the Indigent program unless it meets the following criteria:

1. Shall have 10 or more beds.
2. Shall have license in Tennessee.
3. Shall have a nurse on duty at all times (24 hours per day).
4. Shall have available laboratory facilities including necessary personnel to perform technical laboratory procedures acceptable for routine service.
5. In accepting recipients under this program, each hospital and its staff shall agree to complete the necessary treatment and discharge the recipient in the minimum number of days consistent with good medical care.

A list of acceptable hospitals which shall be amended from time to time shall be submitted to each participating County once annually with a copy to be turned over to the Chairman of the County Screening Committee. Should a hospital, not included on the list, comply with the minimum criteria after official publication of the list, that hospital may be included by notifying the State Department of Public Health with proof of compliance. When this proof shall have been accepted by the State Department of Public Health, amendment to the list shall be mailed to the counties. Such amendments, however, shall not be made more often than once each quarter.

● REGULATION 4—(SECTION 7-D). Method of determining reimbursable cost shall be determined in the following manner: 1. The completion and submission by the hospital of Joint Hospital Form I (attached). Each hospital participating in the Hospital Service for the Indigent program shall file with the State Department of Public Health once annually (within 30 days after the close of the hospital's fiscal year) a financial statement submitted on forms as provided for in Regulation 4-1 of these regulations. 2. In the absence of submission of such form a maximum of \$6.00 per day may be paid to the hospital which meets all other requirements of this Act and regulations promulgated thereunder, and approved by the local Screening Committee.

● REGULATION 5—(SECTION 7-E). Definition of local Screening Committee. The Screening Committee shall consist of three members nominated from: 1. Medical profession. 2. County Court. 3. General public. All of whom are to be nominated by the County Court and recommended to the Commissioner for appointment by and with the approval of the Public Health Council.

● DUTIES. It shall be the duty of the Screening Committee to consider each application and determine the eligibility of the applicant for hospitalization under this Act. The Screening Committee shall at all times keep in mind the intent of the Act as set forth in Section 17 of the Act. Every applicant is entitled to consideration. The applicant shall be required to submit on behalf of himself an affidavit of inability to pay for hospital care that his Doctor claims he needs. In the event the applicant is a minor or is physically unable to execute the affidavit then the affidavit shall be executed on his behalf by the persons legally responsible for his care. In case of emergency when delay would be considered by the applicant's physician to place the applicant in jeopardy, approval may be given by the Chairman of the Screening Committee with concurrence of the County Fiscal Officer for the applicant's admission. The decision of the Screening Committee shall be final in all cases.

● AUTHORITY. The Screening Committee shall have authority within the limitations of the law, the regulations herein promulgated, the limitations of the total quarterly unobligated funds available to the County and with the approval of the County Fiscal Officer authorize hospitalization for applicants considered eligible for assistance under this program.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Liaison Committee to Public Health Department and Hospital Committee Hold Important Meeting

An important meeting of two committees of the TSMA was held jointly in Chattanooga on September 27th, for the purpose of advising the Commissioner of Public Health of the State of Tennessee concerning the licensing of hospitals and clinics in the state. The problems of the Hospital Licensing Board were outlined by Dr. R. H. Hutcheson, State Health Commissioner. He further explained the details and requirements of the existing law concerning licensing of hospitals and clinics.

Important Recommendations Made

After considerable study and discussion of the matter, the two committees recommended the following to the Commissioner and the Licensing Board for Hospitals in Tennessee.

1. That any facility with ten beds or more would be recognized and licensed as a hospital. Any facility with less than ten beds would be licensed as a Clinic.
2. A bonafide hospital will also contain at least one licensed registered nurse who is responsible for nursing service.
3. A bonafide hospital will maintain adequate laboratory facilities.

More Inspection Urged

The two committees also passed a joint resolution that "more adequate inspection of hospitals be carried out" and urged that hospital inspection be improved.

Standardization of Insurance Claim Forms

• Progress is reported on simplification and standardization of insurance claim forms. For several years, organized medicine has advocated a standardized and simplified insurance claim form for use by physicians and hospitals. The Health Insurance Council, which represents 90% of the accident and health insurance business, reports that the form has been submitted to its membership for approval. Standardized forms could be a reality before many more months.

New Accounting System Established in Headquarters Office

• A new accounting and bookkeeping system was put into effect on July 1st in the headquarters office of the Tennessee State Medical Association. With the increasing demands upon the Association and the added financial divisions of the Association, it was necessary to modernize the system previously used. Under the new system, more adequate financial information can be rendered more quickly to the officers and trustees of the Association. The new system also increases office efficiency.

More About Medico-Legal Clinics

• In the September issue of the Journal, this page outlined in detail the purpose and aims of the Legal Liaison Committee of the TSMA. Plans have been further completed concerning the presenting of Medico-Legal Clinics in the various sections of the State.

County Societies and Local Bar Groups to Present Programs

• The programs are to be offered by the various County Medical Societies in which the clinics are to be held, jointly co-operating with the Bar Association of the same county.

Chattanooga Program Completed

• The first Clinic will be held in Chattanooga on the afternoon and evening of October 21st in the auditorium of the Interstate Building. (See September Journal—Organizational

Page—for the type of program to be presented.)

A highly beneficial and informative discussion of medico-legal problems will be presented.

Jackson Program Set for November 2

• The Consolidated Medical Assembly in co-operation with the Madison County Bar Association will present the medico-legal clinic to physicians and lawyers in that area at an afternoon and evening meeting at the New Southern Hotel on November 2. The program has been completed and the lawyers and physicians participating have already been named.

Knoxville Cooperating with U. T. College of Law

• The third program to be presented will be by the Knoxville Academy of Medicine in co-operation with the Knox County Bar Association and the University of Tennessee College of Law. This will be a two-day course offered on November 11-12 at the University of Tennessee College of Law in Knoxville.

Memphis Plans Almost Completed

• The Memphis-Shelby County Medical Society in co-operation with the Shelby County Bar Association is working on the Medico-Legal Clinic to be presented in that area, and tentative dates of November 16th or 23rd have been selected. Committees of the Medical Society and the Bar Association are now active in preparation of the material to be presented to the doctors of Shelby and surrounding counties in West Tennessee.

Johnson City Date Named

• January 5, 1955, has been selected as the date on which the Medico-Legal Clinic will be presented to the physicians in the area near Johnson City. This meeting will be sponsored by the Washington-Carter-Unicoi County Medical Society in co-operation with the Washington County Bar Association. The complete program will be announced at a later date, but physicians and lawyers are being briefed on the type program that will be presented.

Nashville and Middle Tennessee Developing Program

• The Nashville Academy of Medicine and Davidson County Medical Society and the Nashville Bar Association are completing plans for presenting the Medico-Legal Clinic at Nashville at a date yet to be announced.

Much to Be Gained from Clinics

• The Medico-Legal Clinics offer an outstanding opportunity for doctors and lawyers to work out mutual problems and to obtain a better knowledge of procedures involved in trials and court testimony.

Liability Insurance Rates

• Professional liability insurance has become a serious problem, knowledge of which has come firsthand to many members of the TSMA. The situation is not unique in Tennessee, but it is one which doctors in all sections are now facing. This matter is now under study by the Insurance Committee of the Association, and investigations are being made as to whether or not a group liability policy might be obtained covering physicians throughout the state. Plans are also being studied from which it is hoped will emerge a program that will reduce the number of malpractice claims, thus lowering the loss ratio upon which rates are based. This is a long study matter and one which will require additional time to work out. Warning of the possibility of still higher rates came recently when insurance companies tried to obtain an increase in rates in Tennessee.

Rate Increase Denied

• The insurance companies were asking for a 100% increase in liability and malpractice rates, however, they were denied. Your Association was active in this matter. The rate increase was requested by the National Association of Casualty and Surety Underwriters and most of the companies writing malpractice insurance in Tennessee belong to this group.

Public Service

THE TENNESSEE TEN

The Voice Of Medicine Is Strangled

● Organized medicine in Tennessee has a wonderful story to tell the people concerning the skill, service and advances of the profession. But sometimes it is difficult to get this story to the people because of the attitude doctors have toward publicity.

In their attitudes toward each other concerning publicity, doctors are either mildly heckling or downright brutal. An actual example in Tennessee: One surgeon attended a symposium in Chicago and the local newspaper ran a one-paragraph story about it. The story did not even mention the doctor's specialty.

Upon returning to the scrub-up room, this surgeon met a barrage of snide remarks something like this: "I saw your ad in the paper, Jim." Or, "I'd better turn over my patient to Jim this morning so he can do a better job with that new technique he learned in Chicago."

These remarks were not made in jest. The effect they had on the doctor—well, you can imagine. And he doesn't have a thin skin. When I later asked him to be quoted on a Public Service matter, having nothing whatever to do with surgery, he was most reluctant. Naturally, he was.

This episode is related as one that can be duplicated numerous times elsewhere in Tennessee, and throughout the country. It is related to underscore this urgent appeal:

Please, doctors, will you put the sheath on the verbal scalpel that cuts the throat of the voice of medicine? It is not difficult for us to spot a case in which publicity is obviously being sought and we assure you that this will never be encouraged or abetted.

Magazines Are Pro and Con On Medicine

● For the first time in 1954, a rash of articles critical of medicine appeared during October. As a counter-balance, two other articles will go far in improving the public's attitude towards the medical profession.

Critical pieces are: "Why Don't Doctors Clean House?" in Pageant, "Are Your Doctor Bills Padded?" in Look and "Let's Stop Assembly-line Obstetrics" in Household. The "good" articles are: "How to Pick a Doctor," in Changing Times and "What to Do When You Think Your Doctor is Wrong," in McCall's.

In general, articles of a medical nature continued to be popular in the nation's mass circulation magazines. The publications screened by the AMA Public Relations Department contained nine pieces which can be called socio-economic in subject matter and nineteen which can be categorized as health educational.

The American Medical Association has advance information on three articles which will appear in future issues of big magazines. Redbook has scheduled "We Can Have Better Hospital Care," telling of the pioneering approach to the nursing shortage now being utilized by some hospitals. The November Coronet will carry a report on chemical compounds that retard the aging of vital human organs, "Can New Drugs Keep You Young?" A November issue of Collier's will report on the nation's blood bank situation.

Wartburg Means "Work Town"

● Doctor-placement is one of the major functions of the Public Service Committee. This function is directly tied in with the major function of The Tennessee Medical Foundation. It is a pleasure to report that small communities are responding solidly to their own responsibility in this matter. They are appropriating money for clinics and equipment and arranging for opening of drug stores. They are doing other things to give the doctor the tools and facilities he needs to give them the highest standard of medical services.

Two years ago the TSMA began a quiet campaign to help an East Tennessee County do something about its medical manpower shortage. A local committee worked with representatives of the TSMA, and later with the Tennessee Medical Foundation. Obstacles arose and they were surmounted. Headaches came and they were eased. All this required patience and fortitude. Now the project has paid off.

The county is Morgan, the town is Wartburg (German for "Work Town") and on October 17 the community proudly presented to the public its spanking new \$25,000 clinic. There to greet the public was a new doctor and a new dentist—both obtained through the TSMA and TMF. The clinic is equipped and both doctor and dentist will have both rent-free for a breather period.

The Morgan County Court had a decision to make. The sum of \$22,000 was in the treasury earmarked for "courthouse improvements." The court decided that medical care needed improving more than the courthouse. So the money was diverted and expanded to build the clinic.

So the clinic, with its doctor and dentist, stands as a monument to the Morgan County court members as true public servants.

The TSMA and TMF contributed to this project as follows:

1. Advised and stimulated the Court and its Hospital Committee.
2. Provided the clinic blueprints at no cost to the Court (a saving of approximately \$900) and no cost to the TSMA or TMF. A friend of organized medicine drafted the plans at no cost.
3. Obtained the doctor and the dentist.
4. Gave the Court, for its indigent patients, \$1,200 worth of drugs, collected for the Public Department by the girls who work in some forty Nashville doctors' offices.
5. Set up a panel of medical consultants to go to Wartburg and work with the general practitioner who directs the clinic.

This is one of the several communities assisted within the past two years by the TSMA (through the Public Service Committee) and the TMF (through its Committee on Health and Medical Care).

A CHEST MAN, OBVIOUSLY. During a radio interview to promote a health forum in Kingsport, the announcer asked a doctor to explain biopsy. The doctor did so and then the announcer asked for an example to illustrate a biopsy. The physician knocked the announcer off his stool with this reply:

"Well, let's take a breast tumor. We take a bite out of the tissue, slice it, and examine it under the microscope."

Not until the tape recording was played back would the doctor believe he said that. Then we had to erase it from the tape before it was broadcast for the tender ears of the delicate-minded. We tried to keep it in the tape in the hope that such a description would fill the auditorium for the forum!

**TSMA's 120th
Annual Meeting**

• Next year's Annual Meeting of the Tennessee State Medical Association will be held in Chattanooga on April 10-11-12-13, 1955.

**Read House Will Be
Headquarters**

• The Read House Hotel will be the general headquarters for the 120th Annual Session. All meetings of the House of Delegates, the general scientific programs, the exhibits and other of the official activities will be held in the Read House. Some of the activities and meetings of the specialty groups will be conducted in the Patten Hotel. This is due to the fact that sufficient space is not available in the Read House to accommodate all of the activities that may be going on at the same time. Hotel rooms will be available in the Read House and Patten Hotel. Physicians should make their hotel reservations early. CHATTANOOGANS INCORPORATED WILL HANDLE ALL HOTEL RESERVATIONS. REQUESTS FOR HOTEL ACCOMMODATIONS SHOULD BE MADE DIRECTLY TO "CHATTANOOGANS INCORPORATED."

Hotel Reservations

**House of Delegates
to Meet Sunday
April 10**

• The House of Delegates will meet Sunday April 10th at 9:00 A.M. and again on Tuesday April 12th at 9:00 A.M. in the Chestnut Room of the Read House.

Scientific Sessions

• The general scientific sessions will be conducted on the mornings of April 11-12-13, with the afternoons of the same days given over to scientific programs of the specialty societies which will meet concurrently with the Association.

**Trustees Meet
November 28 in
Nashville**

• The Semi-Annual meeting of the Board of Trustees will be held in Nashville on Sunday November 28th at 10:00 A.M. in the Bellemeade Country Club. The agenda contains many important matters for discussion. Among those to be discussed are: (1) Consideration and adoption of a detailed financial statement covering the first three quarters of the present fiscal year. (2) Adoption of the budget for 1955. (3) Confirmation of mail votes taken since the last meeting. (4) Appointments to fill vacancies on various committees due to resignations, deaths and other reasons. (5) Review and discuss plans for the 1955 Annual Meeting. (6) Hear reports from committees appointed by the Trustees and designated to report at this meeting.

Items on Agenda

**3rd Conference on
Medical Care in Coal
Mine Areas**

• Representatives of the Tennessee State Medical Association at the Third Conference on Medical Care in the Bituminous Coal Mine Areas, meeting at Huntington, West Virginia on October 23rd and 24th were: Dr. Frank Roberts, Memphis; Dr. R. H. Hutcheson, Nashville; Dr. B. M. Overholt, Knoxville; Dr. John R. Thompson, Jr., Jackson; Dr. John Winebrenner, Knoxville; Mr. J. E. Ballentine, Executive Secretary and Mr. Ed Bridges, Public Service Director of Nashville.

**Conference
Purposes**

• Purposes were to seek ways and means of improving medical and hospital care in the bituminous coal mine area through cooperation and liaison between the state medical associations in the area and the medical representatives of the United Mine Workers of America Welfare and Retirement Fund.

**Five States
Represented**

• The conference was attended by representatives of state medical associations from Pennsylvania, Kentucky, Virginia, West Virginia and Tennessee. In addition, were representatives from Public Health Departments, Medical Schools, U.M.W.A. Officials, A.M.A. representatives and regional directors of the U.M.W.A. Welfare and Retirement Fund.

**Tennessee's Report
States Our Position**

• The first day was consumed by reports on progress made by the several states represented.

The report from Tennessee was given by our President, Dr. John R. Thompson, Jr. of Jackson. The report was one of progress and contained the following broad action that has been taken. (1) Continuous visits with communities for the purpose of discussing problems with all interested parties. (2) Continue to assist in recruitment and placement of physicians with the sponsorship of organized medicine. (3) Sponsored a system of specialist consultation to rural areas, cooperating with the larger county medical societies. (4) Integrated the program in rural areas with the state public health services. (5) Implementation of rural post-graduate plans. (6) Continued efforts to broaden the program of care for the indigent in Tennessee through the Hospital Act For the Indigent, passed in the last session of the Tennessee Legislature.

Subjects of Discussion

● A large part of the conference dealt with the broad subject of "The Practitioners Point of View." This subject was divided for discussion into the following topics: "The Physician-Hospital Utilization," "Liaison with County and State Medical Societies" and "Relationship with Individual Physicians." Dr. B. M. Overholt, Chairman of the Committee on Medical Care of the Tennessee Medical Foundation rendered the report on Liaison with County Medical Societies. His report was a story of progress and a challenge to the participants in the conference.

Tennessee's Accomplishments Commended

● Due to the outstanding report made by the Tennessee Delegation, a most unusual resolution was presented, and passed unanimously by the conference. The resolution follows:

Resolution

● "The Third Conference on Medical Care in the Bituminous Coal Mine Areas has heard with great interest reports from Tennessee concerning its program for bettering medical care in low income sections of its coal fields. The work done in these areas serves the entire profession as a pilot project in co-operation between organized medicine, state health departments, a labor union-sponsored health program and local communities. The progress made in meeting the health problems of marginal income areas reflects credit upon the medical profession of Tennessee, and its Medical Schools. It benefits the entire medical profession by its favorable effect on public opinion.

NOW THEREFORE BE IT RESOLVED by this Conference that we congratulate the Tennessee Medical Profession and Medical Schools on their accomplishments and express our sincere appreciation for the expenditure of time and effort which has gone into it."

A.M.A. Journal to Feature TSMA History

● From time to time, the organization section of the Journal A.M.A. carries as one of its features, the history of various State Medical Associations. The Headquarters office has been requested to furnish the A.M.A. with a broad sketch of the history of the TSMA. The historical report of this Association covering the period from 1830 through 1954 will soon appear in the Journal A.M.A. Watch your A.M.A. Journal for this interesting recap of the history of your Association.

Society Membership for Internes and Residents

● Approximately 7,000 new graduates and 20,000 physicians serving internships, residencies and fellowships with approved hospitals are not affiliated with organized medicine. Although a great many of these physicians would welcome the opportunity to join a county and state medical society as soon as they graduate, generally it has not been possible for them to do so because only very few county or state societies have made available a type of membership for this group.

Some Classification of Membership Urged

● At the A.M.A. meeting in San Francisco last June, a resolution was introduced urging that a type of membership be established for these groups of physicians.

County Societies Might Give Consideration

● County societies throughout the state might study this suggestion with the thought of including into their types of membership, one which would cover this group and enable them to participate in organized medicine.

Public Service

THE TENNESSEE TEN

High Level Conferences Are Impotent

• The American Legion has decided that the "high level" conference with the AMA on Veterans' Medical Care is absolutely out. This decision followed a caustically-worded resolution against AMA policy concerning medical care of veterans in VA hospitals. The resolution was adopted at the recent Legion convention in Washington.

Local level sessions on this problem have long been proposed by the TSMA's Committee on Veterans' Affairs. So the Legion's decision was the cue to get these "grass roots" meetings rolling in Tennessee. The first one—and the first one of its kind in the nation—was arranged, promoted, and conducted by Dr. J. Paul Baird of Dyersburg, District member of TSMA's Committee on Veterans' Affairs, and District Councillor for the Association. The large and broadly representative attendance at this meeting, in Dyersburg's Legion Hall on the night of November 3, was the best testimony of Dr. Baird's enterprise and hard work for his Association.

Approximately 100 interested officials and rank and file members of eight organizations attended the session. Dr. Baird moderated and keynoted the session. The panel of discussants was composed of:

Dr. H. H. Shoulders, Chairman of the TSMA Committee, who presented for reaction the Tennessee Plan of VA Medical Care.

Mr. James Crider of Nashville, Chairman of the Legion's Committee on Rehabilitation for Tennessee.

Mr. Whit LaFon of Jackson, Legion State Commander.

Judge Elmer Gardner, Chairman of the Dyer County County Court.

Dr Russell Moore of Dyersburg, President-Elect of The Tennessee Dental Association.

Mr. W. D. Barfield of Ripley, Administrator of the Lauderdale County Hospital.

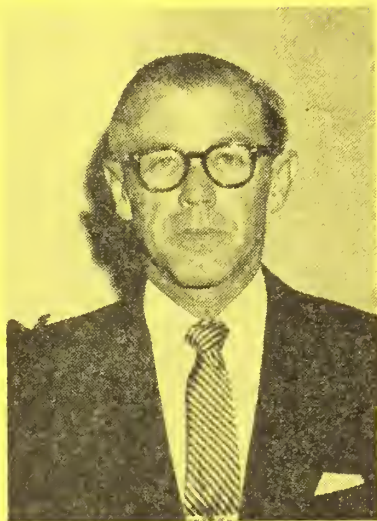
Mr. Earl Newsome, Commander of the Dyer County Post of Disabled American Veterans.

Mr. Robert Looney of Nashville, State Adjutant of the Legion.

Mr. George Denny of Rutherford, District Service Officer for the Legion.

The session covered the nine counties in the Congressional District represented by Congressman Jere Cooper. He had planned to attend but the whopping Democratic election result called him back to Washington.

Mr. Crider reaffirmed the Legion's strong opposition to the AMA policy on VA Medical Care. He also said the Legion felt that veterans "are a special class" of citizens. He



Dr. Paul Baird

added that doctors also seemed to feel they were in a special class because "the medical profession arranged to pay doctors in service \$100 more per month than other men of the same rank."

Consensus of Legionnaire reaction (at this meeting) to The Tennessee Plan was that it had definite merit but the Legion would not go along with it.

Dr. Shoulders' presentation commanded considerable space in daily papers throughout the nation and several national radio commentators devoted time to it on the day following the Dyersburg meeting.

FTC Hits Health Insurance Ad Claims

● The TSMA House of Delegates last April called for an investigation of all companies selling health insurance in Tennessee. The Federal Trade Commission apparently is doing some deep investigating itself. The following report from the AMA Washington Letter No. 94 will be of special interest to TSMA members:

"The Federal Trade Commission on October 19 filed formal charges accusing 17 insurance companies of false and misleading advertising of health and accident plans through misrepresentation of their policies. Immediately the Joint Committee on Health Insurance, representing the industry, issued a statement emphasizing that the complaints were not a definite finding or ruling. The statement also said that the government's action should not be interpreted as evidence 'that the relatively few companies involved are averse to changing their advertising to remove FTC objections.'

"In the event the government's charges are sustained by the full committee following hearings, the FTC will issue cease-and-desist orders, requiring the companies to alter their advertising to comply with the orders. FTC estimates that the 17 companies account for about a third of the individual accident and health policies in existence in the United States.

"Some of the misrepresentations alleged by FTC include: (1) Extent of coverage—Many policies will not pay at all for losses due to such things as nervous disorders, or pregnancy; nor for hernia and heart disease unless originating six months after policy date, nor for sickness traceable to pre-existing conditions. (2) Maximum dollar limits—Many policies provide full payment only for one or two comparatively rare operations; maximum average payable is one-fourth of the specified amount or even less. (3) Starting time of coverage—Certain companies represent coverage at effective policy date, although coverage begins after a specified period. (4) Health status of applicant—Certain companies state no medical exams are required to obtain policies when actually policies don't cover pre-existing conditions.

"FTC listed the companies and locations and dates for preliminary hearings as follows: American Hospital and Life, San Antonio, Dec. 20; American Life and Accident, St. Louis, Dec. 14; Automobile Owners Safety, Kansas City, Mo., Dec. 13; Bankers Life and Casualty, Chicago, Dec. 15; Commercial Travelers, Salt Lake City, Dec. 17; Commercial Travelers Mutual Accident, Utica, Dec. 20; Guarantee Reserve Life, Chicago, Dec. 13; Illinois Commercial Men's Association, Chicago, Dec. 10; LaSalle Casualty Co., Chicago, Dec. 14; Life Insurance Co. of America and its officers, Wilmington, Del., Dec. 21; Mutual Benefit Health and Accident Association (Mutual of Omaha), Omaha, Dec. 16; Prudence Life, Chicago, Dec. 9; Reserve Life, Dallas, Dec. 17; Southern National, Little Rock, Ark., Dec. 15; Travelers Health Association, Omaha, Dec. 15; and United Insurance, Chicago, Dec. 16."

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

*Important—See Dec. 11 AMA Journal,
page 1407*

The Board of Trustees At Work— the Doctors Who Conduct the Affairs of Your Association



Photo, Wm. N. Cook, M.D.

From left to right, reading clockwise: Dr. A. M. Patterson, Chattanooga; Dr. Wm. J. Sheridan, Chattanooga; Dr. Chas. C. Trabue, IV, Nashville; J. E. Ballentine, Exec.-Sec., Nashville; Dr. Jas. C. Gardner, Chairman, Nashville; Dr. Robert N. Buchanan, Jr., Nashville; Dr. R. H. Kampmeier, Nashville; Dr. John R. Thompson, Jr., Jackson; Dr. Carol C. Turner, Memphis.

Semi-Annual Meeting of Board of Trustees Held

• The Board of Trustees of the Tennessee State Medical Association met for the regular semi-annual session in Nashville on November 28th, with all members present. In addition to the Board, composed of Dr. James C. Gardner, Chairman, Dr. A. M. Patterson, Dr. Carol C. Turner, Dr. R. N. Buchanan, Jr., and Dr. Wm. J. Sheridan, the following officers were also present: Dr. John R. Thompson, Jr. President, Dr. Charles C. Trabue, IV, President-Elect and Dr. R. H. Kampmeier, Editor and Secretary. Also attending, were Executive Secretary, J. E. Ballentine and Public Service Director, Ed L. Bridges. Dr. W. W. Wilkerson, Jr., Dr. Daugh W. Smith and Dr. William N. Cook appeared before the Board of Trustees to discuss special projects.

Headquarters Building Committee Reports

• Dr. Daugh W. Smith, Chairman of the Headquarters Building Committee of the Association, reported showing a floor plan of the proposed Headquarters office. The plan revealed an approximate total of 2,200 Sq. Ft. of floor space that would be contained in the proposed building. The Committee's report estimated that the structure would cost approximately \$30,000 to erect. The method of financing and maintaining the new headquarters building was discussed in detail.

Construction Planned

• The Trustees approved the work of the committee and instructed that it proceed with obtaining an architect and construction of the building. Completed plans of the structure will be forwarded to the members of the Board of

Trustees for final approval. It was estimated that the structure could be completed by the latter part of 1955.

Other Important Board Actions

- Among other items of business transacted by the Board, the following were of importance:

Financial Reports Submitted

- The Executive Secretary presented a detailed financial statement covering the period January 1-October 31, 1954. The report included all receipts and disbursements, fund balances and a proposed budget for the year 1955. After careful analysis of the financial reports, they were approved as submitted. Although the financial statement covered only the first ten months of the fiscal year, it was significant that the statement showed that collections for the budget anticipated for 1954 had already been received, while the 1954 appropriations and expenditures had been expended on schedule.

1955 Budget Adopted

- The budget, as submitted for the Organizational Department for 1955 was adopted. All major items of the budget—both anticipated revenue and proposed appropriations—were supported by pertinent data based on experience and need as well as our financial resources available for 1955.

Mail Votes Confirmed

- Several votes had been taken by the Board in order to expedite action since the April meeting of the Trustees. These and other actions were reviewed and formerly approved as follows:

- (1) Appointment of Dr. Frank A. Moore of Jackson as Chairman of the Emergency Medical Service Committee.
- (2) Official approval was granted for the mail votes taken since the last meeting wherein the loan made for the purchase of the Headquarters Office property, was given official sanction.
- (3) Confirmation of the Liaison Committee to the Public Health Council consisting of Drs. L. W. Edwards, R. H. Kampmeier, and Charles C. Trabue, IV.
- (4) Appointment of Dr. Ralph H. Monger, Knoxville, to the Chairmanship of the Cancer Committee succeeding Dr. C. H. Heacock of Memphis who had previously resigned.
- (5) Endorsed the "Church Attendance Crusade" of the Methodist Church.
- (6) Approved and endorsed the program of the Committee on Public Policy and Legislation of the TSMA.
- (7) Established a Liaison Committee to the Tennessee State Dental Association, naming Dr. Richard D. Taylor of Dyersburg as Chairman.
- (8) Approved of efforts to obtain a change in the Healing Arts Law wherein advertisements of hospitals may include the listing of their medical staff. This would apply in medical publications going to doctors only.
- (9) Approved \$200.00 to conduct a State-wide Rural Health Conference.
- (10) Discussed the Postgraduate Education Program.

Committee Appointments

Other Action

The Board considered a retirement program for the Association's employees. The Board reviewed the plans submitted by various insurance underwriters. No action was taken and it was moved that the study be continued.

Annual Meeting Plans Discussed

- The Executive-Secretary and Dr. R. H. Kampmeier reported on the general plans for the Annual Meeting to be held in April 1955 in Chattanooga. The report dealt with the scientific program, specialty groups and general arrangements.

Public Service

THE TENNESSEE TEN

• Activities of the Public Service Committee for the six months since the last Annual Session have covered a dozen fields. Below we report the highlights of those projects and programs.

SPREADING MEDICAL CARE TO ALL

A. The Indigent

• Under the Indigent Law which became effective July 1, 1954, 14 Tennessee counties were eligible automatically. That left 81 Chairmen of County Courts to be contacted before they conducted budget-making sessions in July. All 81 were seen personally, with many local physicians assisting, and today 56 of these counties have voluntarily voted themselves under the Law.

Governor Frank G. Clement promised a Public Service Committee delegation headed by Chairman L. W. Edwards, M.D., that he would ask the legislature for an adequate appropriation for the Indigent Law, in the 1955 session. He has made this a part of his Administrative Program. The Public Health Council has approved a budget request for the State Health Department for 1955-'56, and 1956-'57 calling for \$500,000 for the first year for the Indigent Law operation, and \$1,100,000 for the second year of the biennium. Total, \$1,600,000.

The Public Service and Legislative Committees sponsored a Nashville meeting October 29 which aligned behind the Indigent Law the support of The Tennessee Hospital Association, Tennessee State Nurses Association, The Tennessee Society of Psychologists, Tennessee Society of Medical Social Workers, State Health Council and Department, Tennessee Society of Physiotherapists, State Mental Health Department. Other organizations previously supporting the original bill included the State P.-T.A., Tennessee Farm Bureau Federation, County Court Judges Association and four labor unions, The AFL, CIO, UMWA and Big Four Brotherhood of Railway Trainmen.

Twenty-two other State Medical Associations are studying the TSMA blueprint for medical care for the indigent and at least seven of these are planning legislation for next sessions of the legislature. President Eisenhower has said repeatedly that the best answer to Socialized Medicine is "locally administrated medical programs for the Indigent." Now, he apparently has added his once-defeated Re-Insurance Bill.

B. The Isolated

• The Placement Bureau of TSMA is operated by the Public Service Committee. During the past two years, this Bureau has assisted 32 physicians in establishing themselves in cities and towns of 10,000 population down to several places of less than 500. The Bureau has worked especially closely with The Health and Medical Foundation in its efforts to extend medical care and facilities to isolated areas. Expensive drugs and equipment were provided by the Bureau to the clinics at Wartburg and Pruden Valley, with-

out cost but through the generosity of doctors, doctors' widows and doctors' secretaries who responded to Public Service appeals.

C. Mid-Incomers

- Public Service programs and projects, on the statewide level and working with local Society PS Committees, have pushed the purchase of voluntary health insurance policies. Implementing a resolution of the last House of Delegates, we have investigated complaints against half a dozen companies. These complaints came from policy-holders, hospitals, lawyers, industries, doctors, personnel managers, bankers, doctors' aides and farm and labor organizations. In some cases we were able to document the complaints with legal evidence. Your attention is called to the second page of the Yellow Section on Public Service in the November Journal of TSMA. Some of the evidence cited by the Federal Trade Commission came from Tennessee.

Free Health Forums

- Four new forum fronts opened up within the past six months. Initial series forums were conducted in Kingsport, Bristol, Cleveland and in a rural section of Maury County. Physician keynoters, moderators and panel members turned in excellent jobs and public and press response was good. The Kingsport Times and Kingsport News turned in probably the outstanding job in the Nation in promotion of this public service project. The first time such a forum has been tried in a rural area—at the Mynders Community schoolhouse in Maury County—the response was very encouraging. Panel members represented the Tennessee Farm Bureau, the State Public Health Department, Agricultural Extension Service of U.T., Tennessee Hospital Service Association. Organized medicine was represented by the Moderator, Dr. W. N. Cook of Columbia. Nashville and Memphis Medical Societies, at the request of newspaper sponsors, repeated their forums with brand new topics. Attendance compared very favorably with the preceding year. We have learned that, despite heavy promotion, the public does not quite understand the value of the forums until two or three have been conducted. Then they express a desire for more and more of them. Much depends upon promotion. At Kingsport, where the papers went "all out," a 1,500-seat civic auditorium was almost full at all of the four forums despite other competition.

House-Cleaning

- This authorized activity is as important as it is unpopular and unpleasant. From the State level, we have tried to lend assistance to small (and large) societies which find it difficult to apply effective discipline to some of their members. Some of the Societies we have tried to help have not responded with a full measure of supportive evidence. This we must have because a layman's opinion is feather-weight before a court of law. The defending lawyers can always say, and prove, that laymen know nothing about medical care. The State Grievance Committee, composed of the past three presidents of TSMA, now has two cases under consideration, and several more under investigation. It is not generally understood that a patient may bring a complaint directly to the State Grievance Committee without going first to a local Society Grievance Committee. That right was established in the language setting up the State Committee. It is NOT primarily an appeals court at all. It has been 18 months since the Public Service Committee voted the Director a "green light" for exploring the possibilities of house cleaning. Investigative experience and constant contact with the consumers of medical services leave your investigator with two conclusions:

(Continued on page 498)



